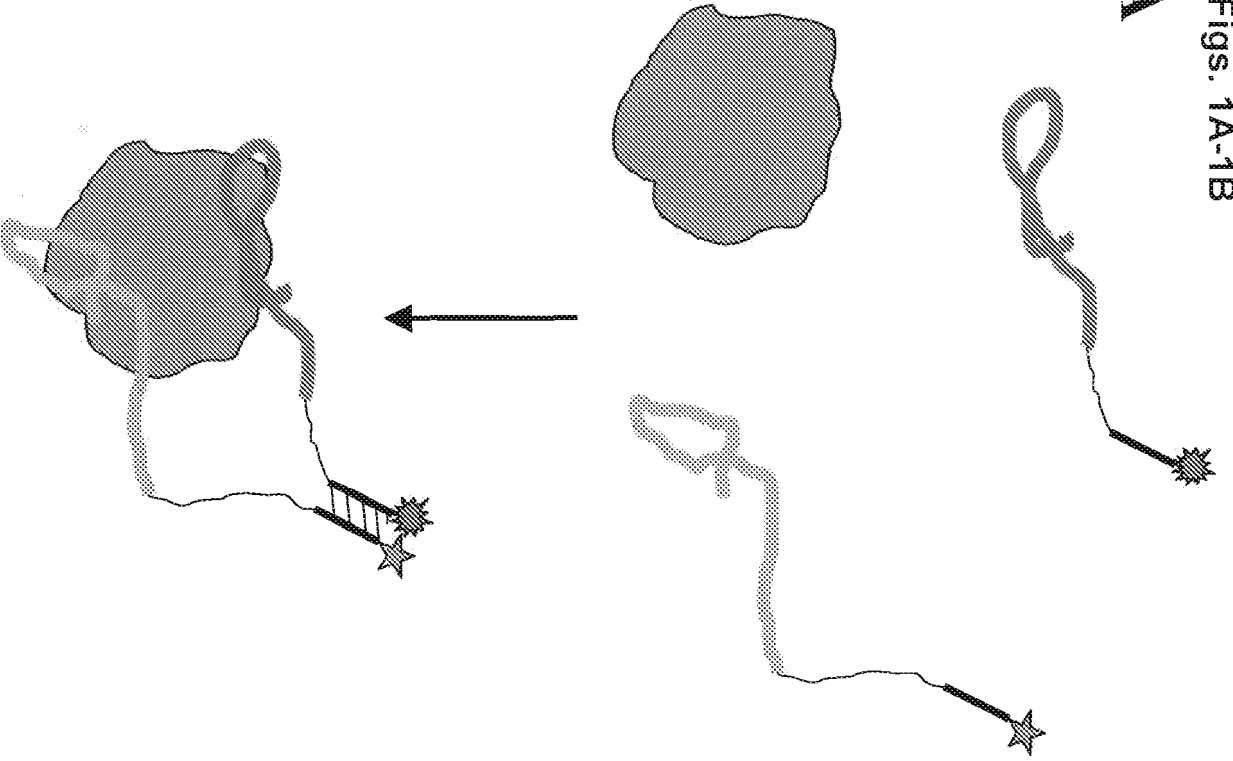
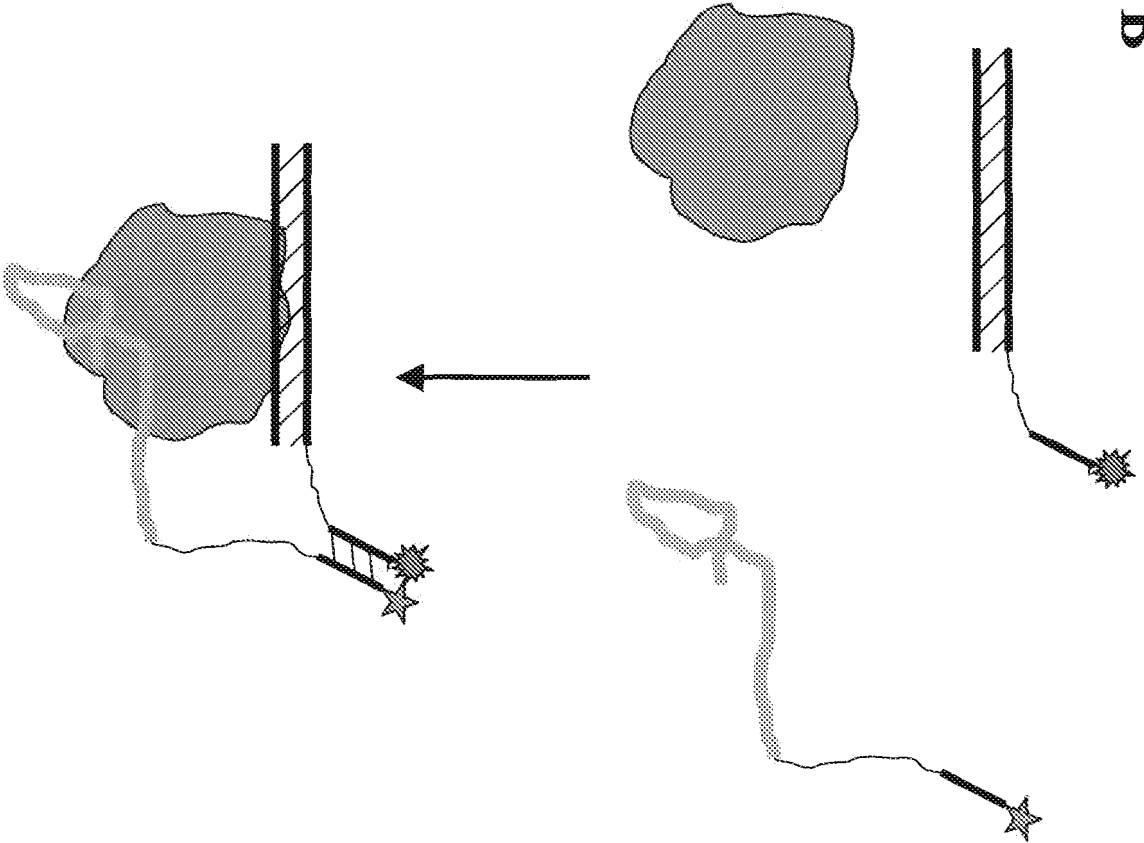


Figs. 1A-1B

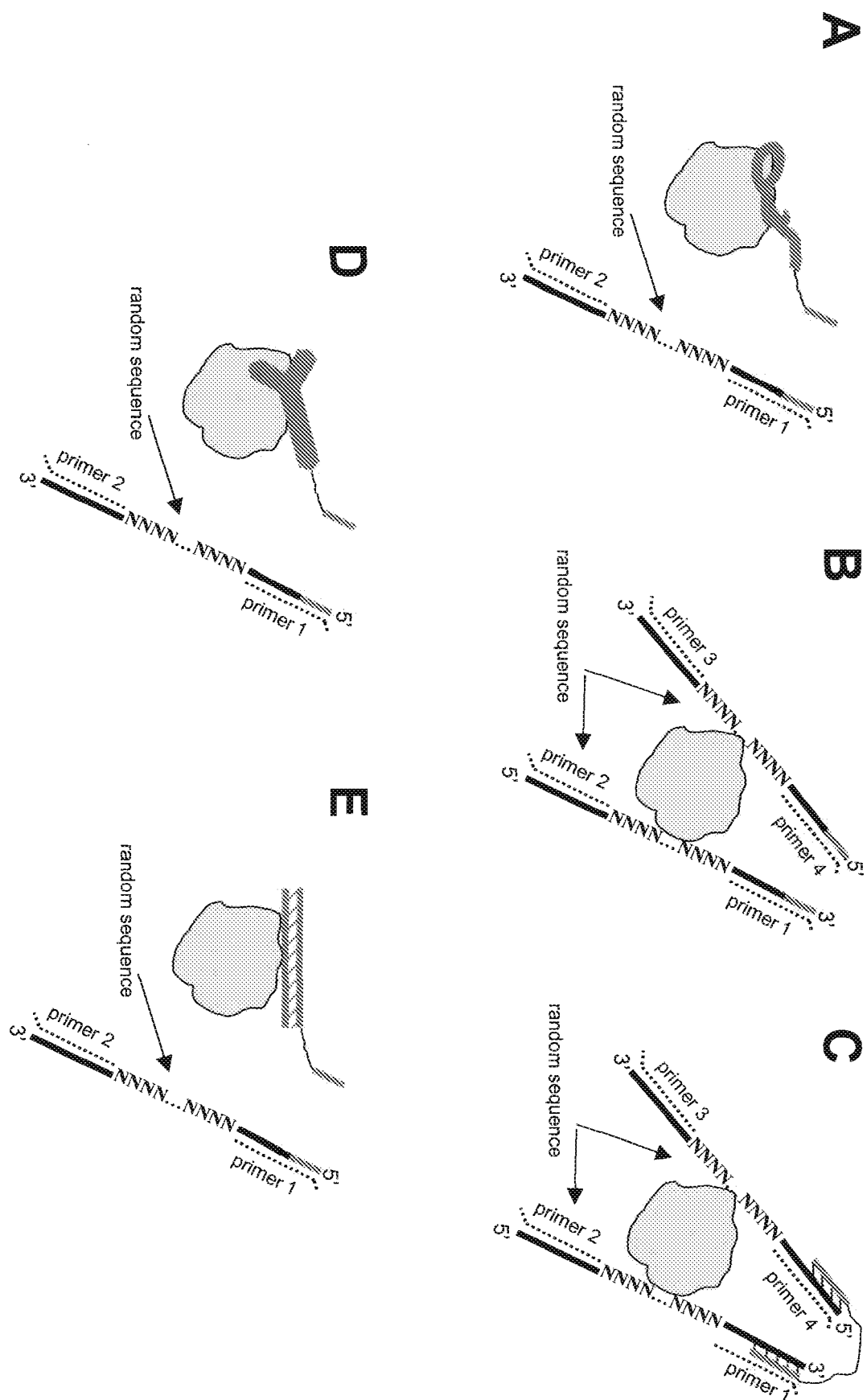
A



B

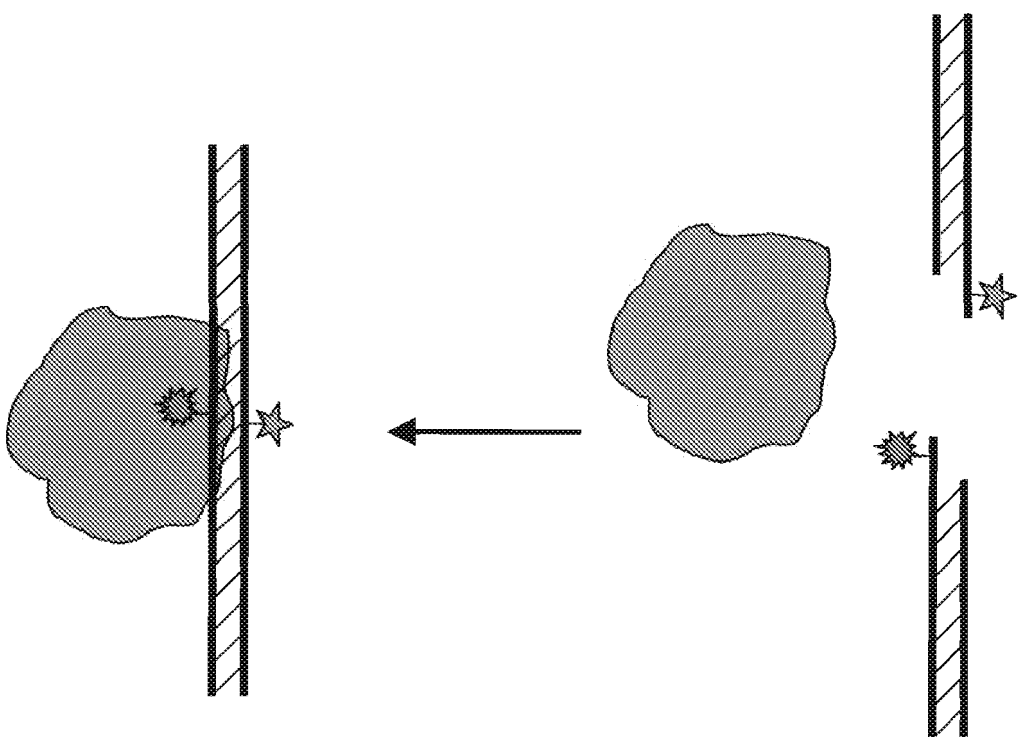


Figs. 2A-2E



Figs. 3A-3B

A



B

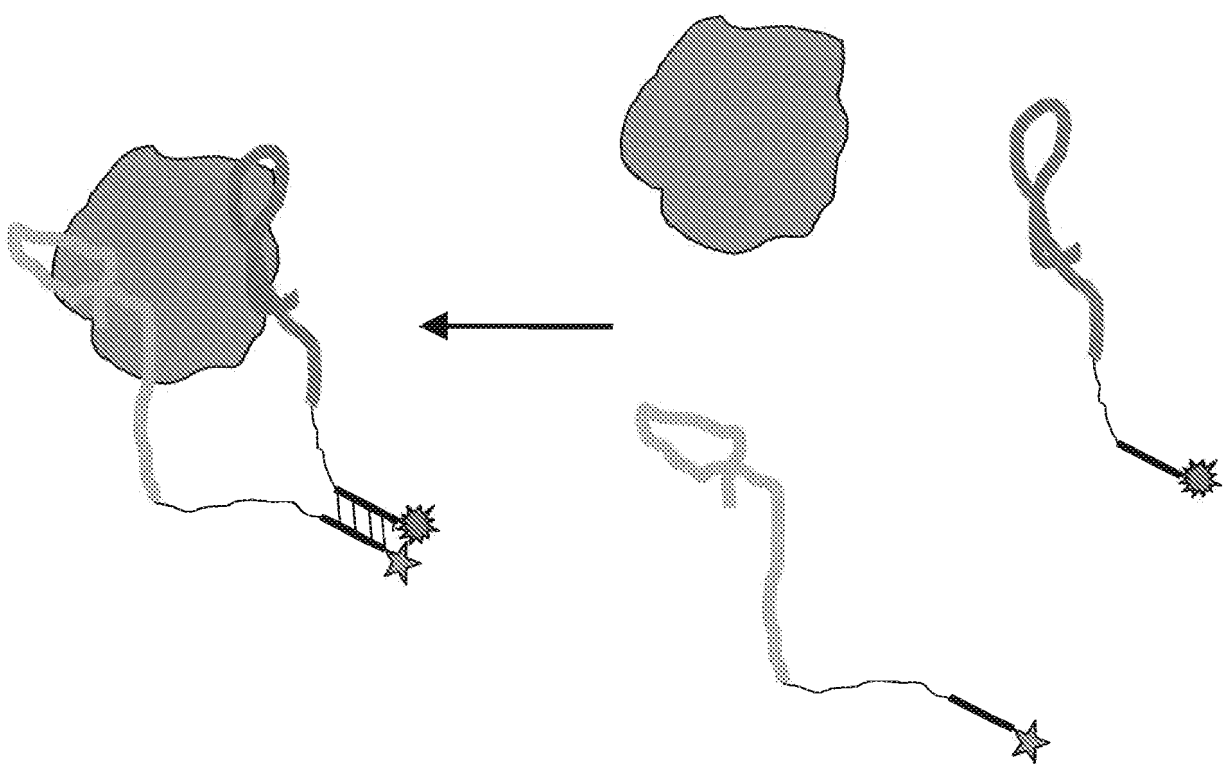
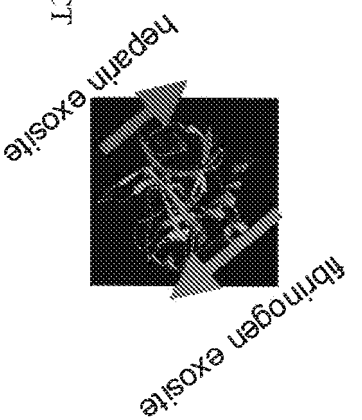


Fig. 4

60-18 [29]

G15D



THR1
5' Fluorescein AGT CCG TGG TAG GGC AGG TTG GGG TGA CT



THR2
5' Fluorescein GGT TGG TGT GGT TGG



THR3
AGT CCG TGG TAG GGC AGG TTG GGG TGA CT



THR4
GGT TGG TGT GGT TGG



THR5
AGT CCG TGG TAG GGC AGG TTG GGG TGA CTX XXX XGG TTG GTG TGG TTG G



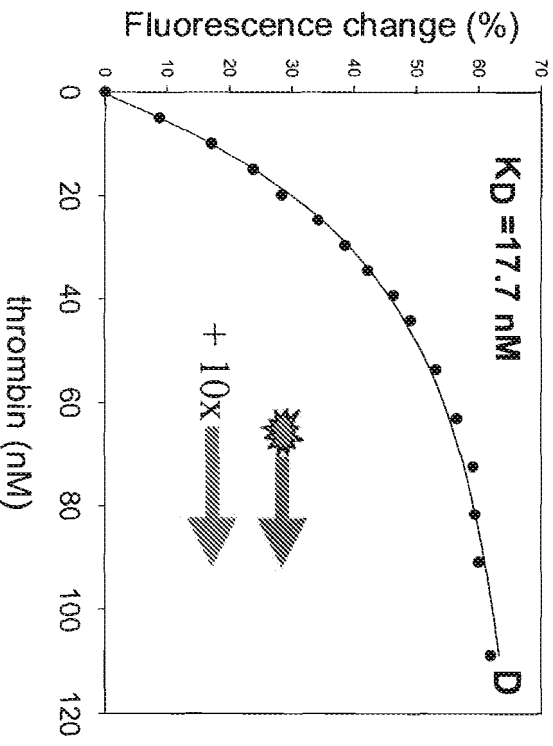
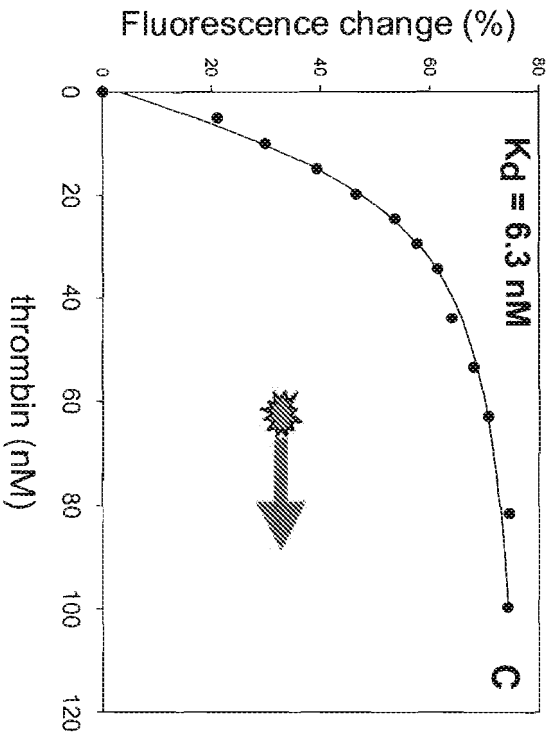
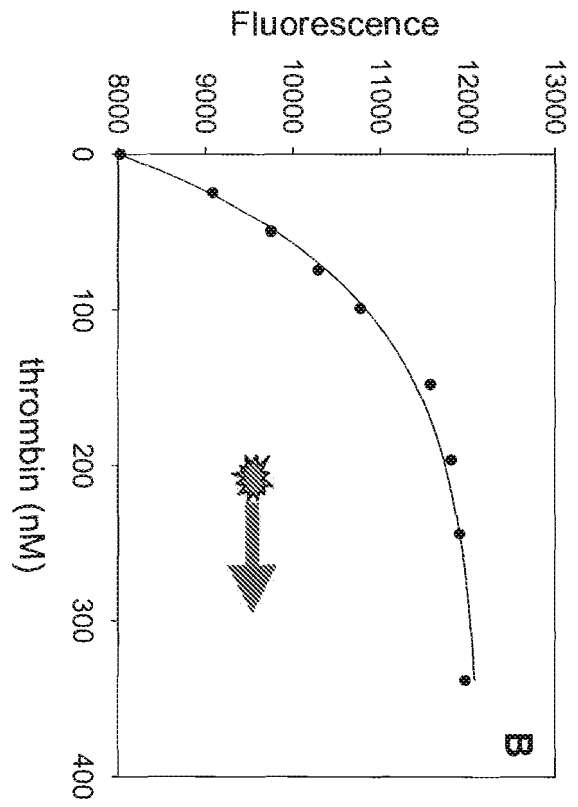
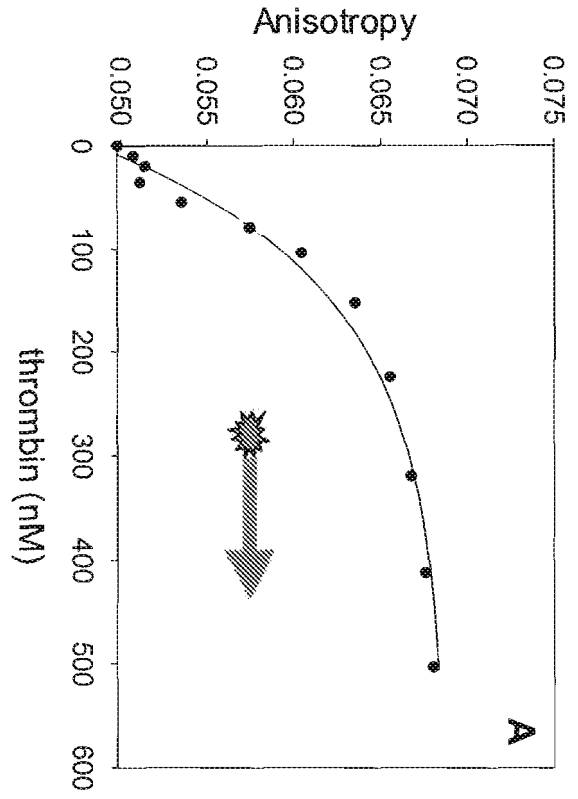
THR6
AGT CCG TGG TAG GGC AGG TTG GGG TGA CTX XXX XXX GGT TGG TGT GGT TGG



THR7
GGT TGG TGT GGT TGG XXX XXX XAG TCC GTG GTA GGG CAG GTT GGG GTG ACT

X = Spacer 18

Figs. 5A-5D



Figs. 6A-6D

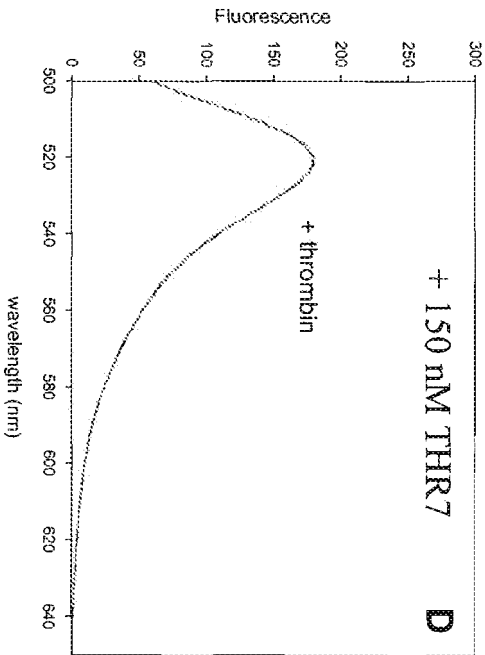
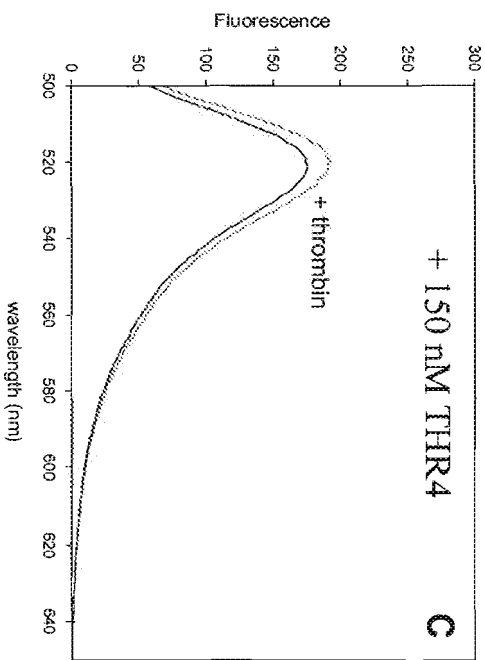
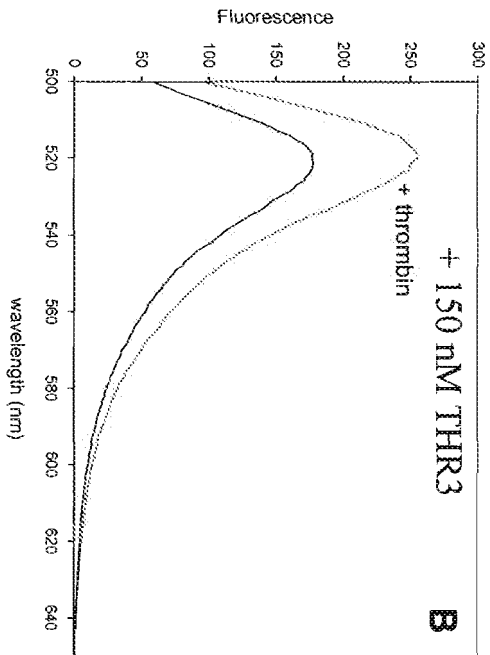
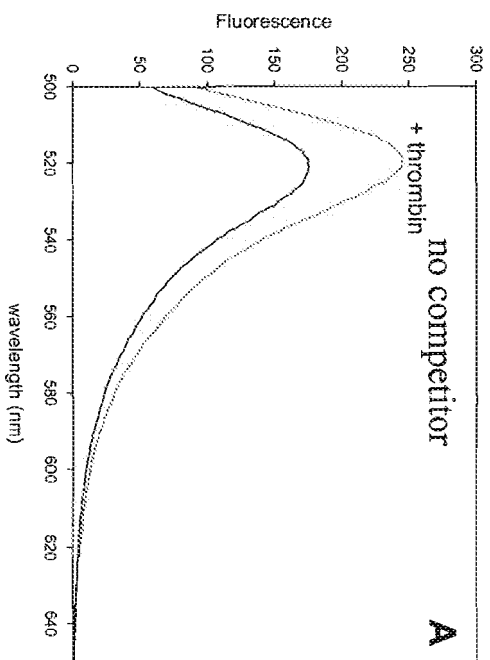
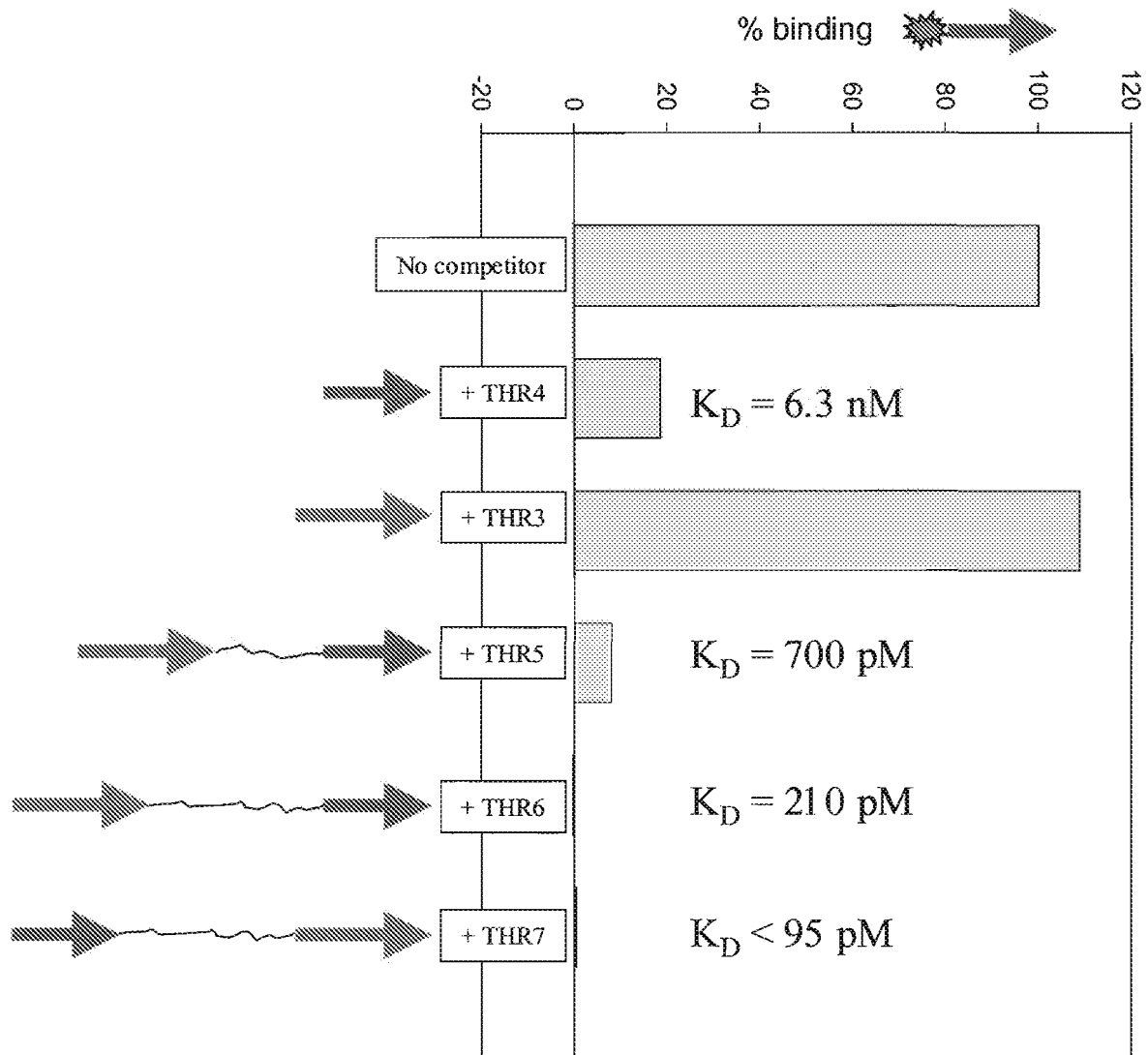
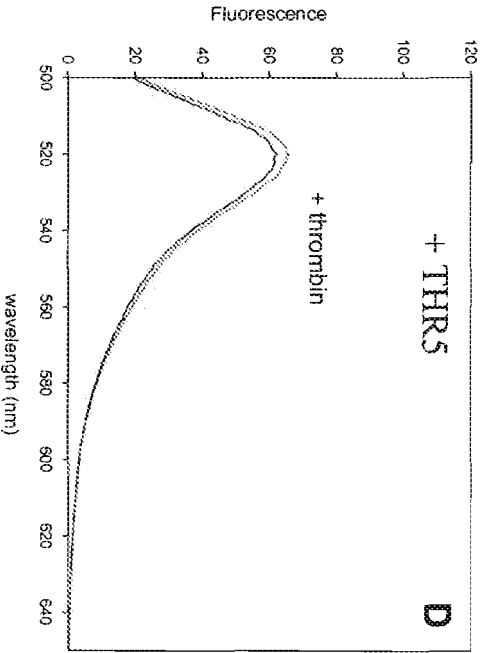
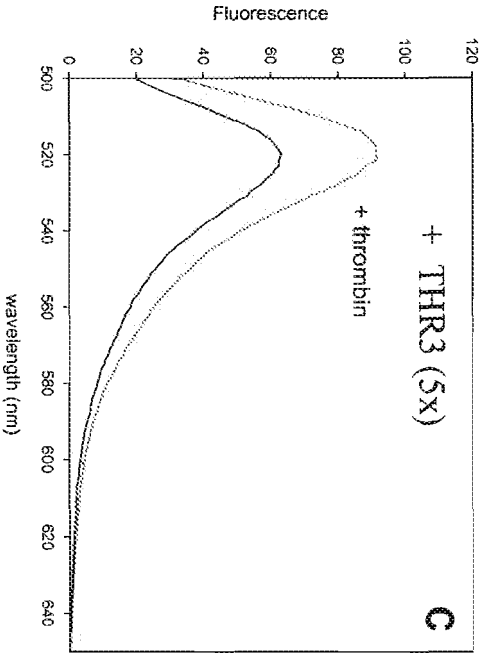
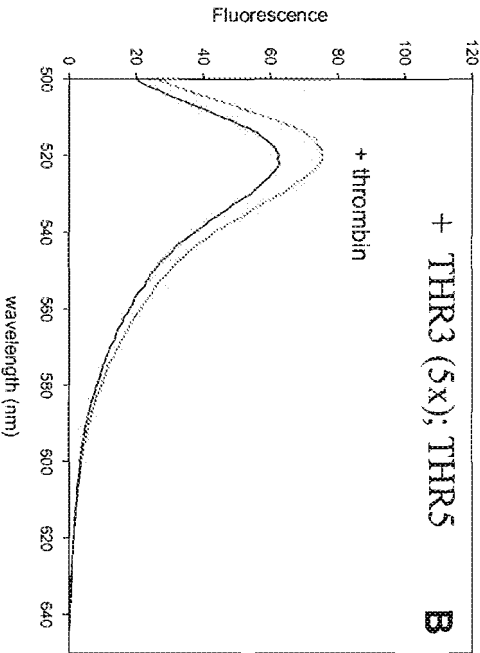
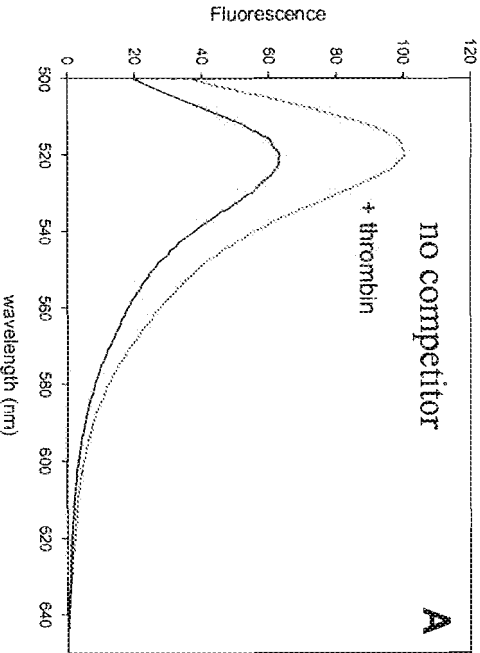


Fig. 7



Figs. 8A-8D



Figs. 9A-9B

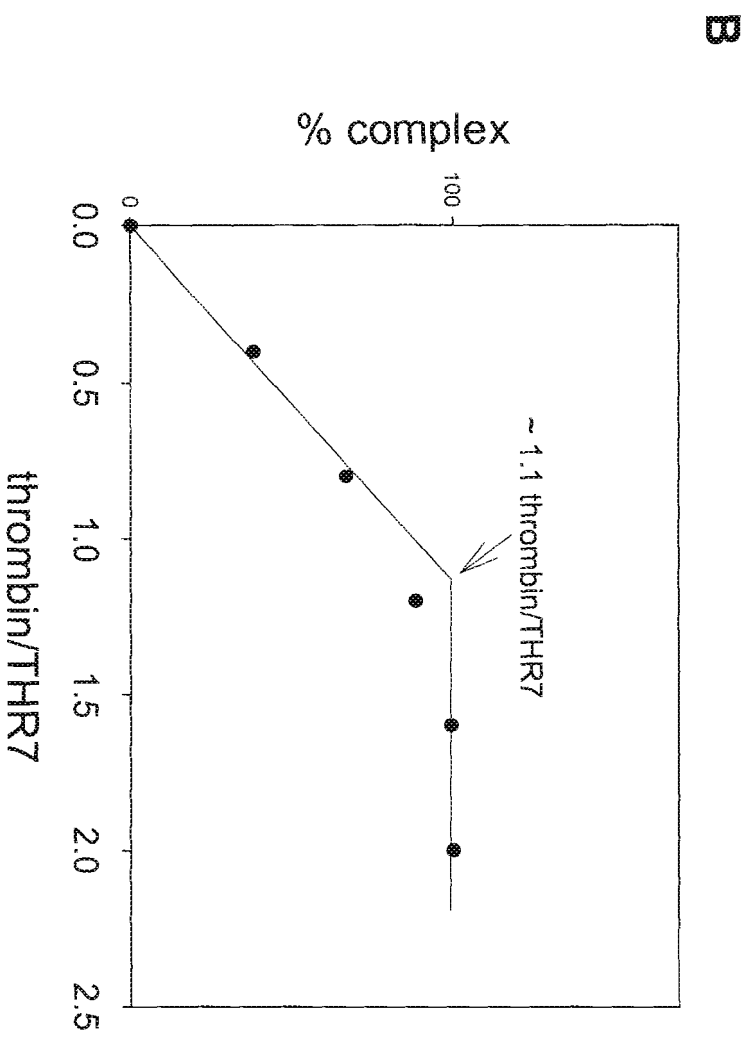
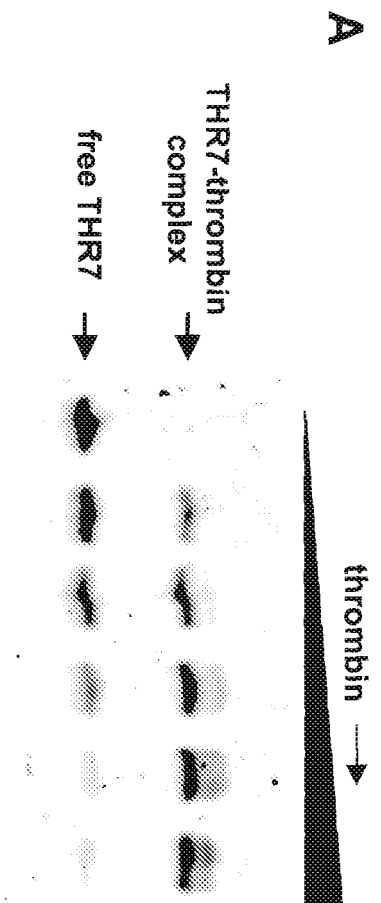
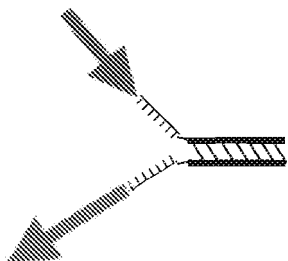


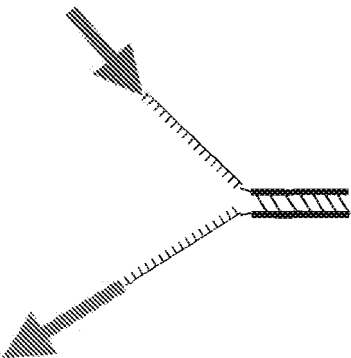
Fig.10

60-18 [29]

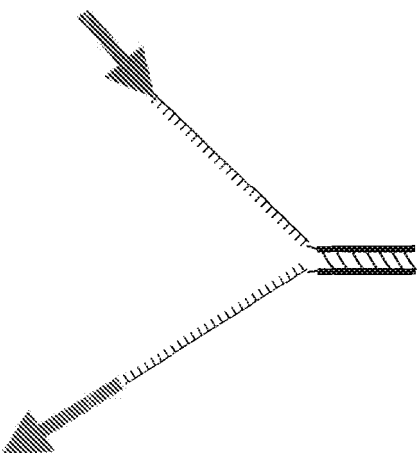
G15D



THR14
GGT TGG TGT GGT TGG TTT TTT T CTG TCG TTA GTG AAG GTT
THR15
AAC CTT CAC TAA CGA CAG TTT TTT T AGT CCG TGG TAG GGC
AGG TTG GGG TGA CT

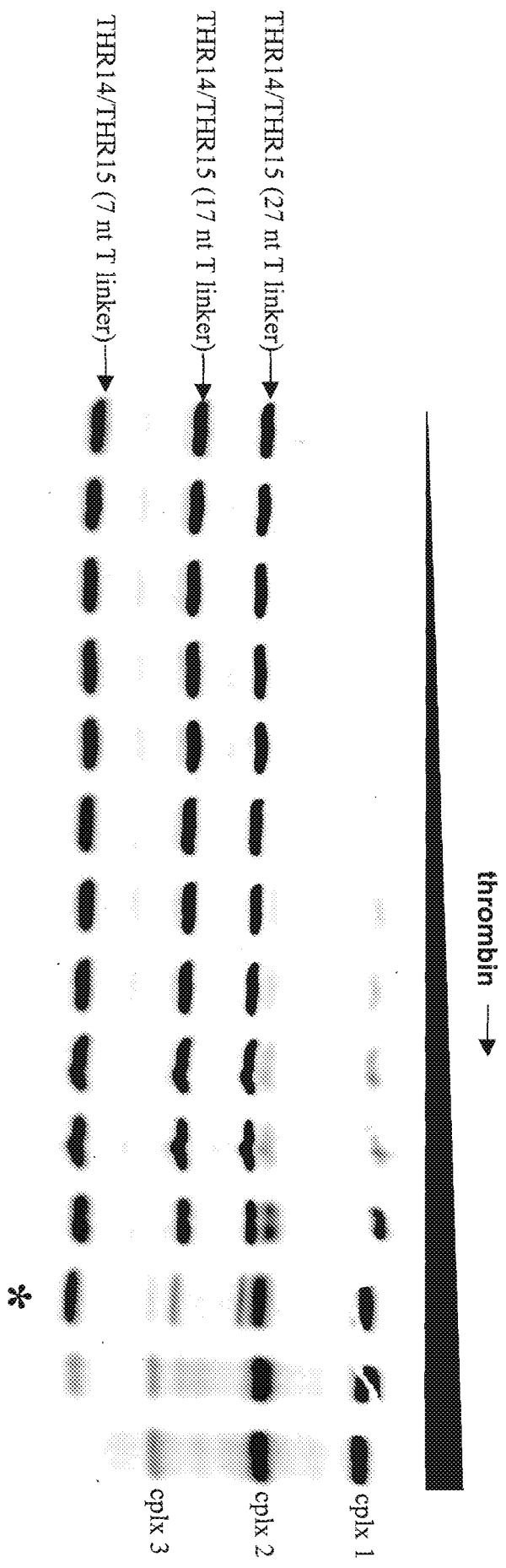


THR16
GGT TGG TGT GGT TGG TTT TTT TTT TTT TTT TT CTG TCG TTA GTG
AAG GTT
THR17
AAC CTT CAC TAA CGA CAG TTT TTT TTT TTT TTT TT AGT CCG TGG
TAG GGC AGG TTG GGG TGA CT

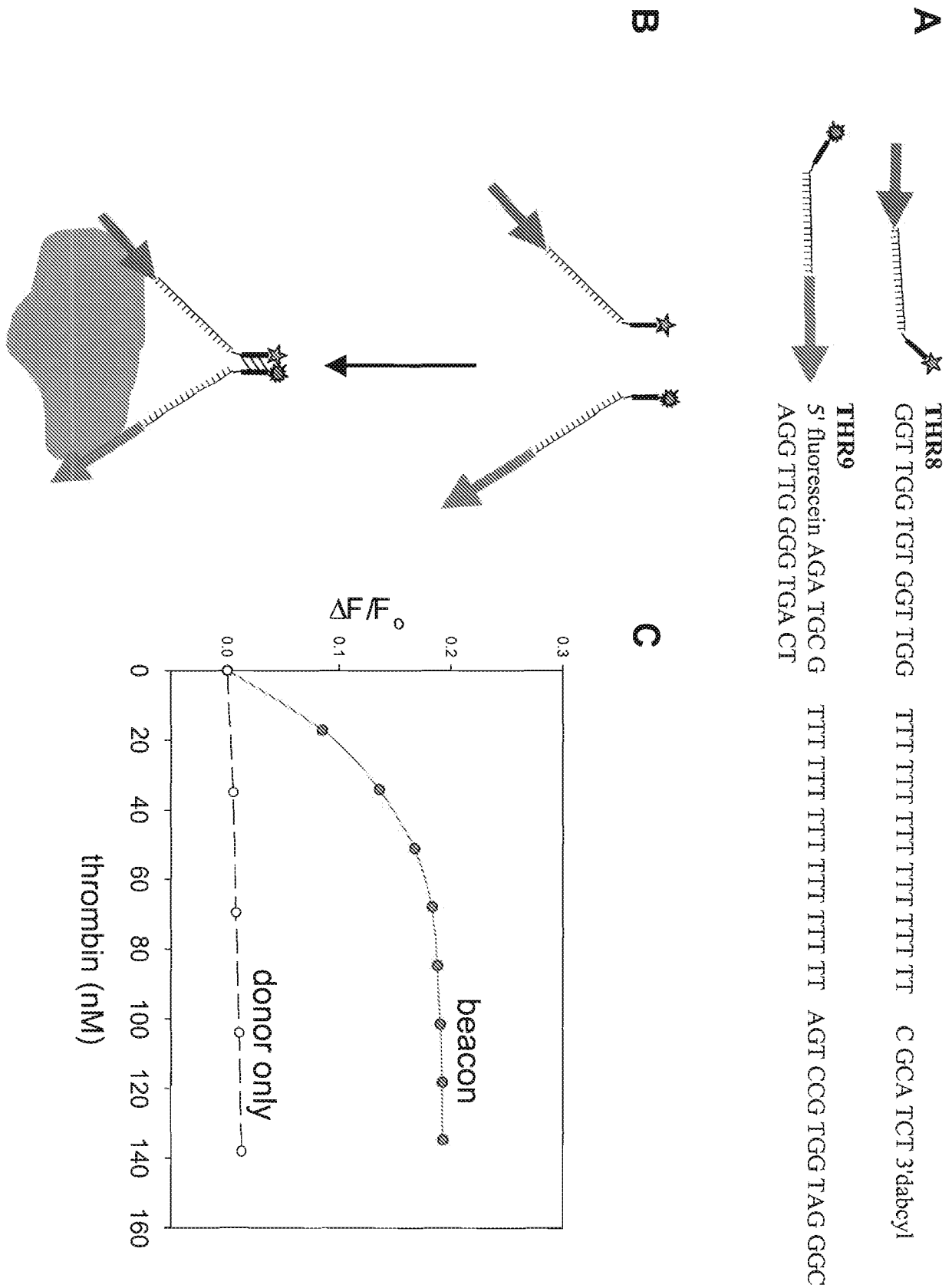


THR18
GGT TGG TGT GGT TGG TTT TTT TTT TTT TTT TTT TTT CTG TCG
TTA GTG AAG GTT
THR19
AAC CTT CAC TAA CGA CAG TTT TTT TTT TTT TTT TTT TTT AGT
CCG TGG TAG GGC AGG TTG GGG TGA CT

Fig. 11



Figs. 12A-12C



Figs. 13A-13C

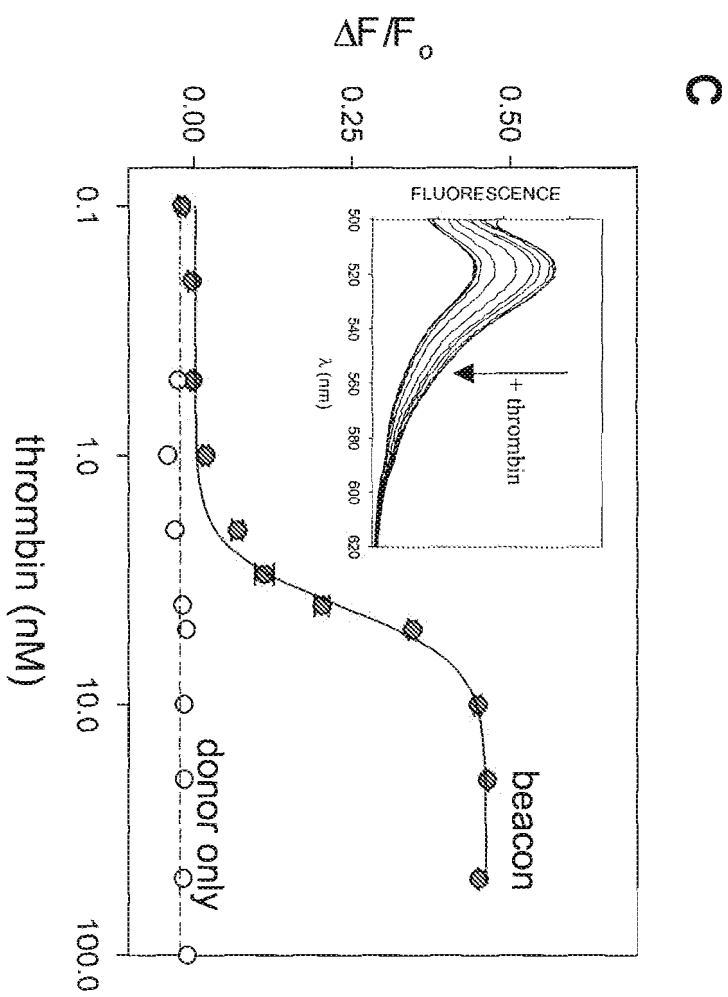
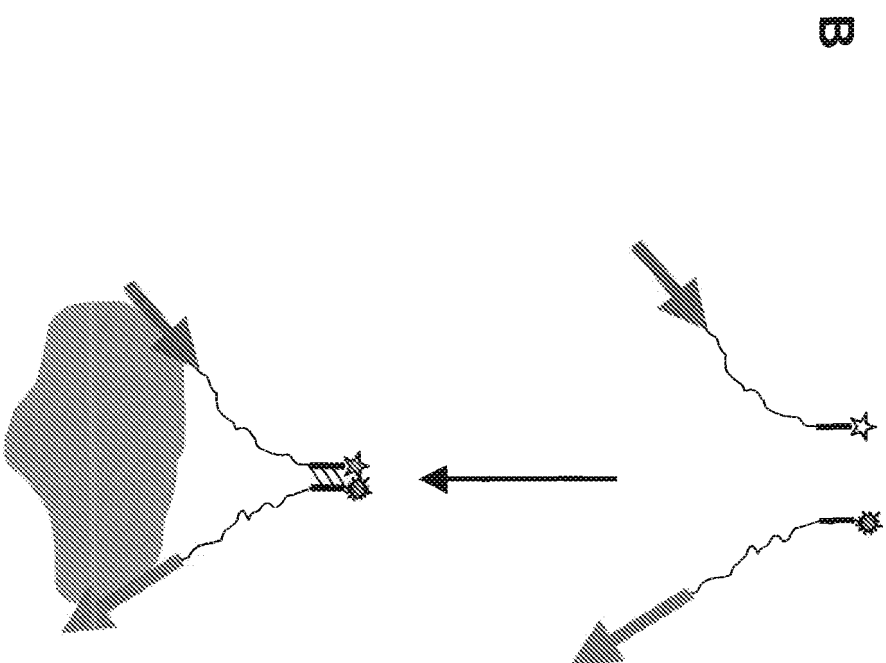
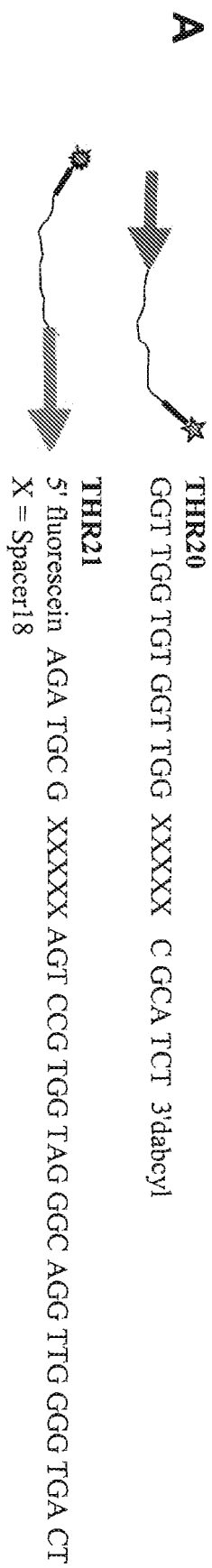
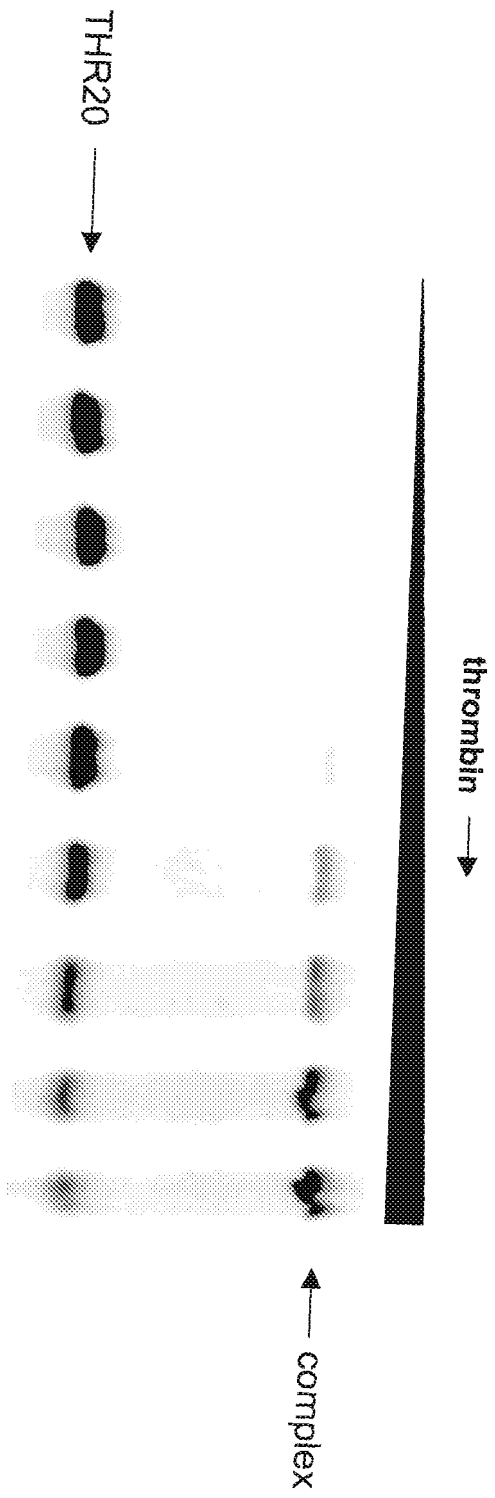


Fig. 14



Figs. 15A-15B

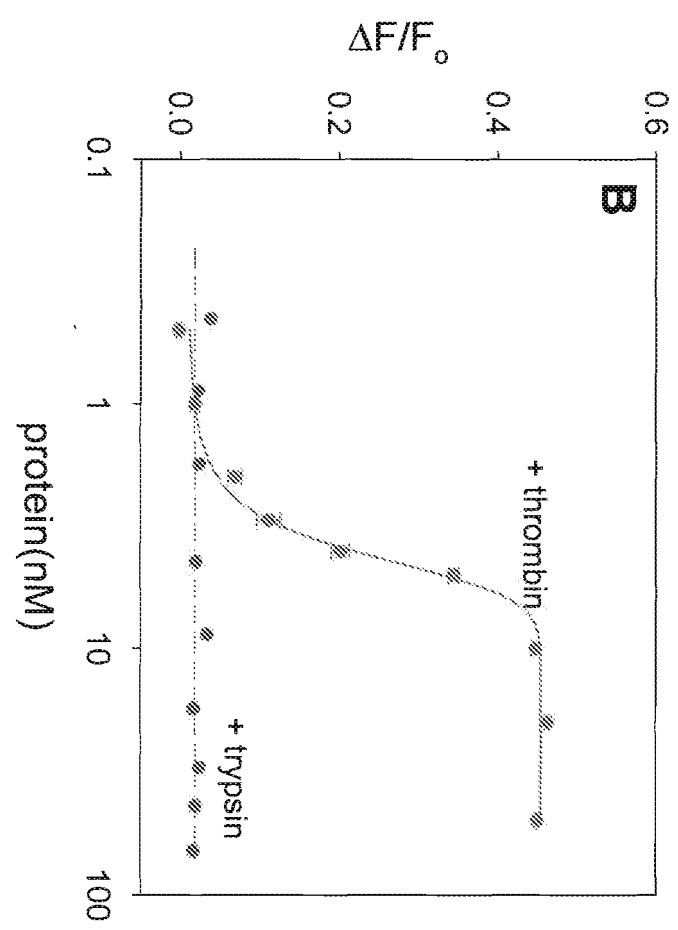
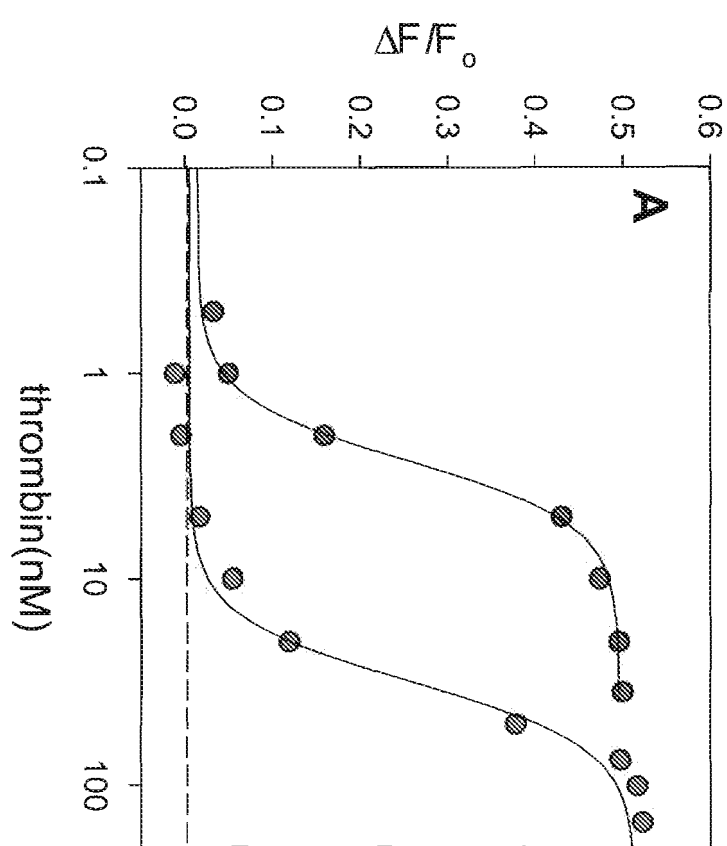
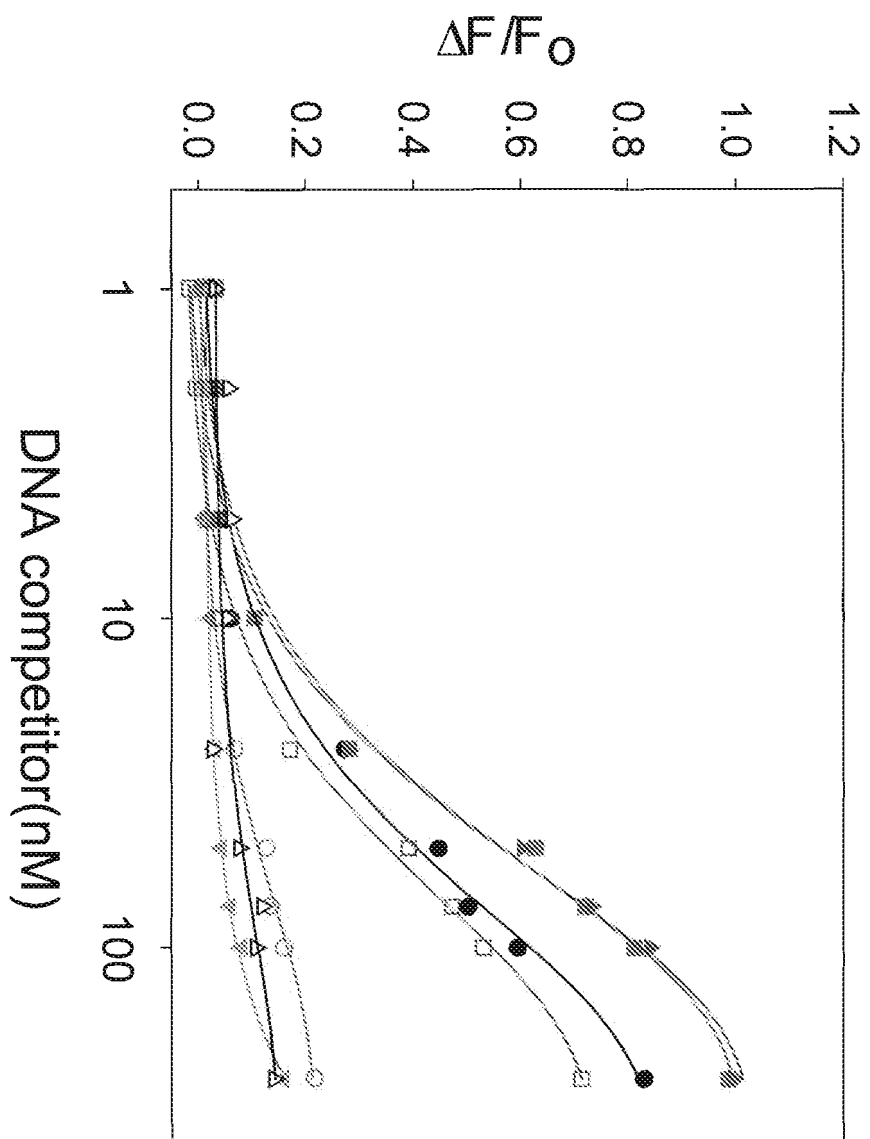
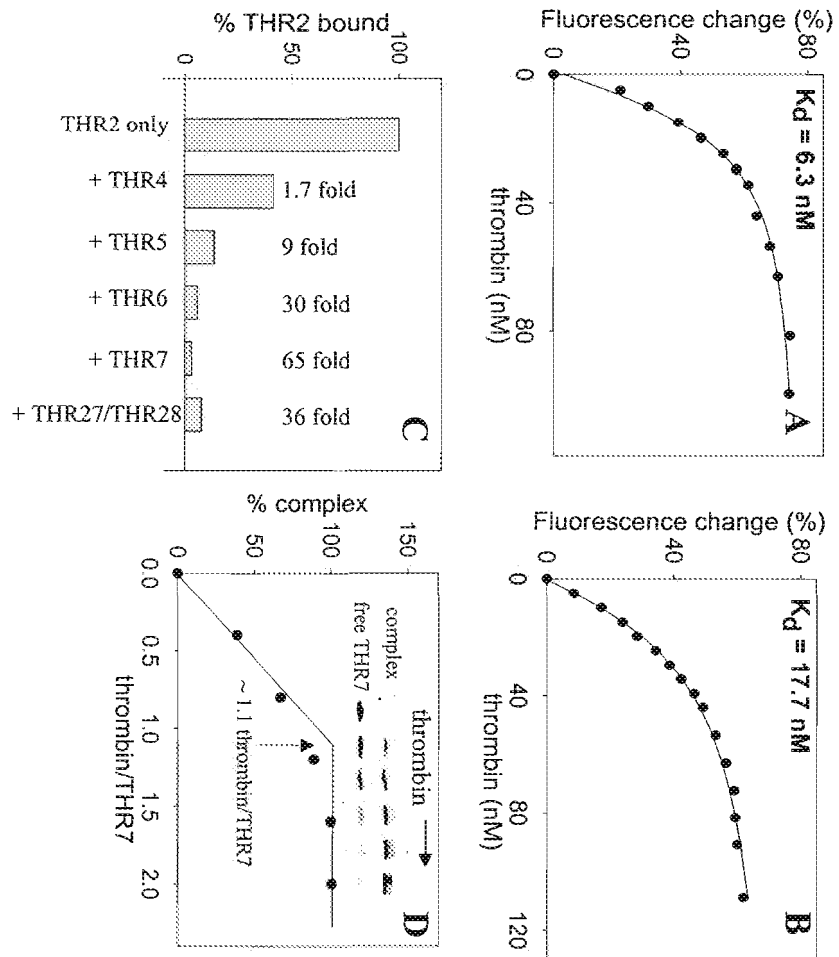


Fig. 16

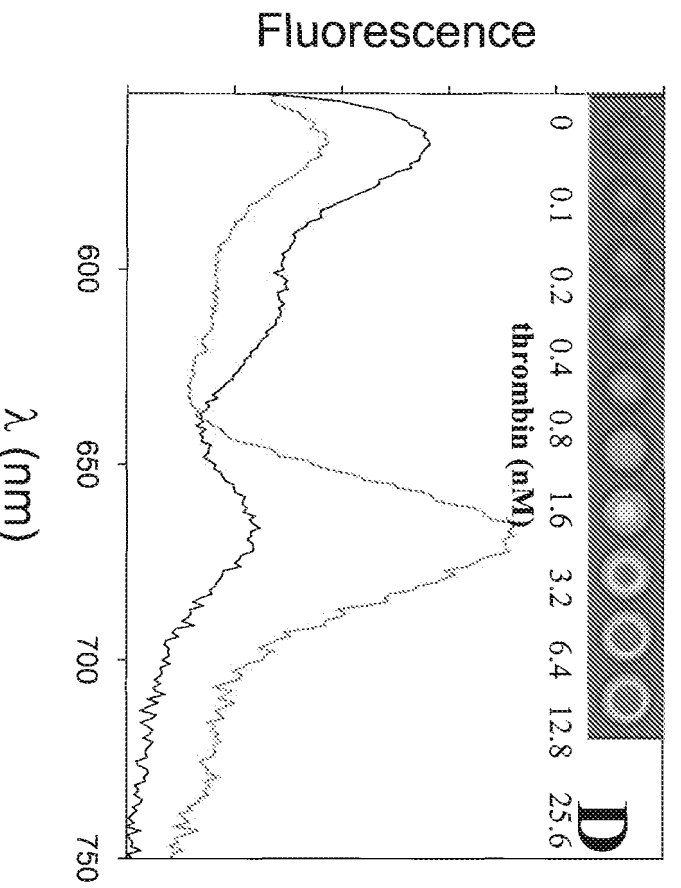
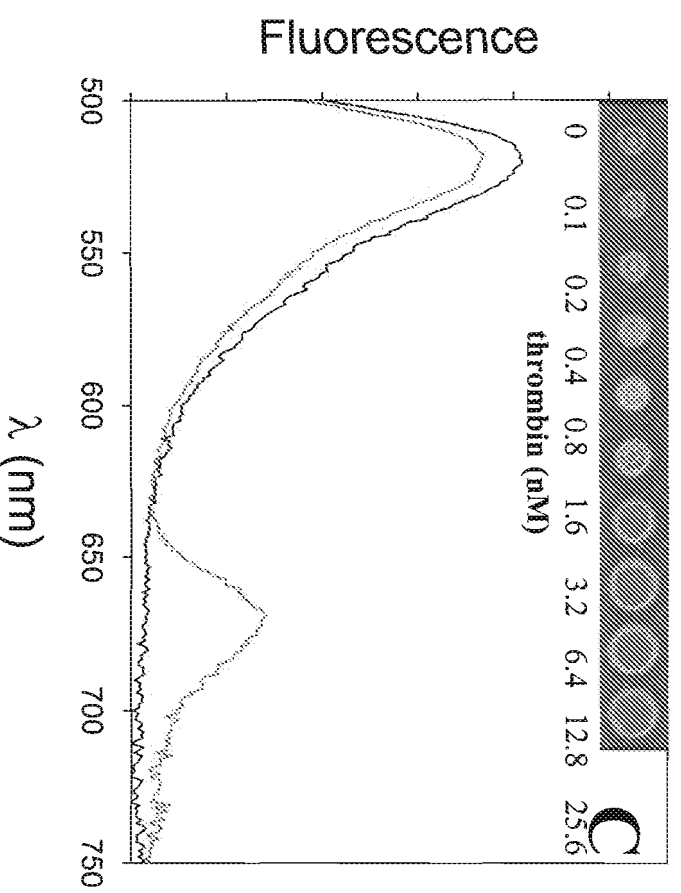
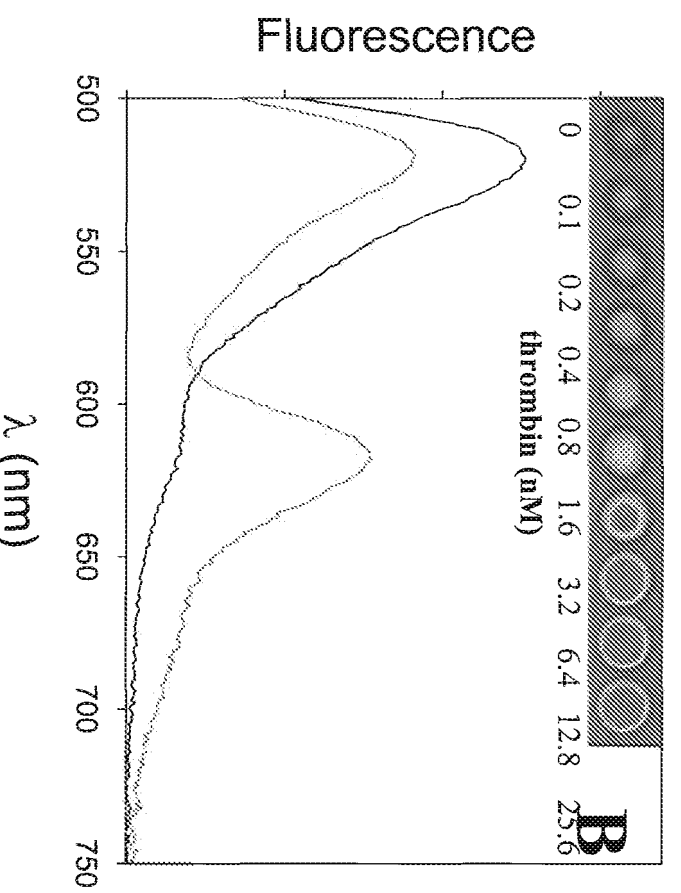
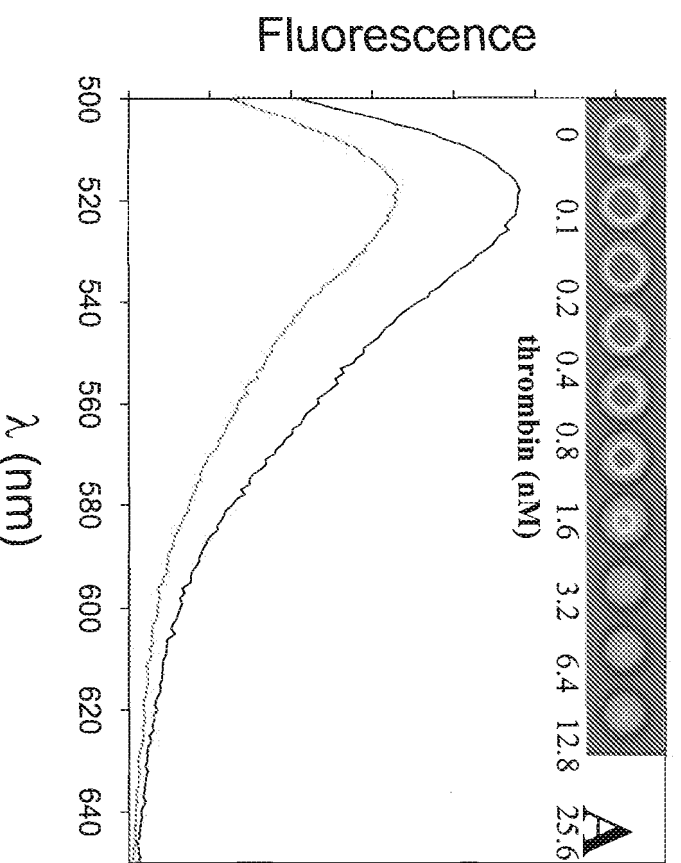


Figs. 17A-17D



Figs. 18A-18D

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Figs. 19A-19F

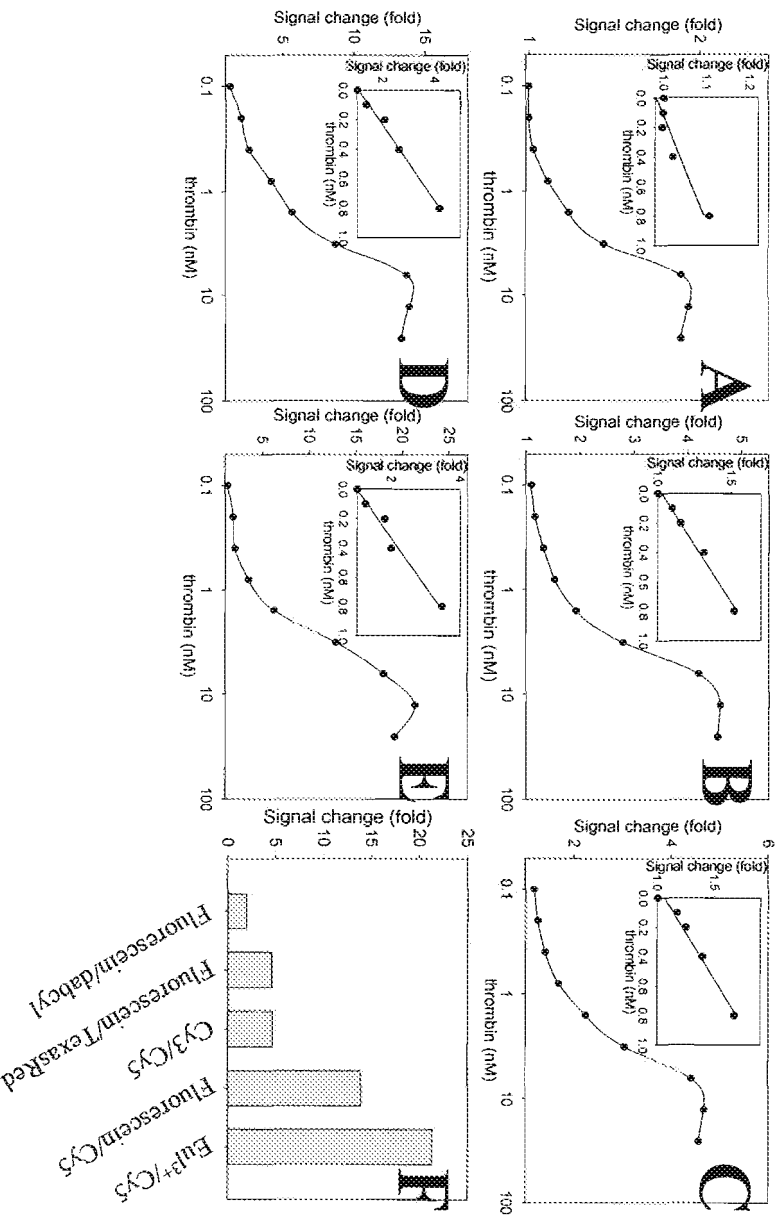
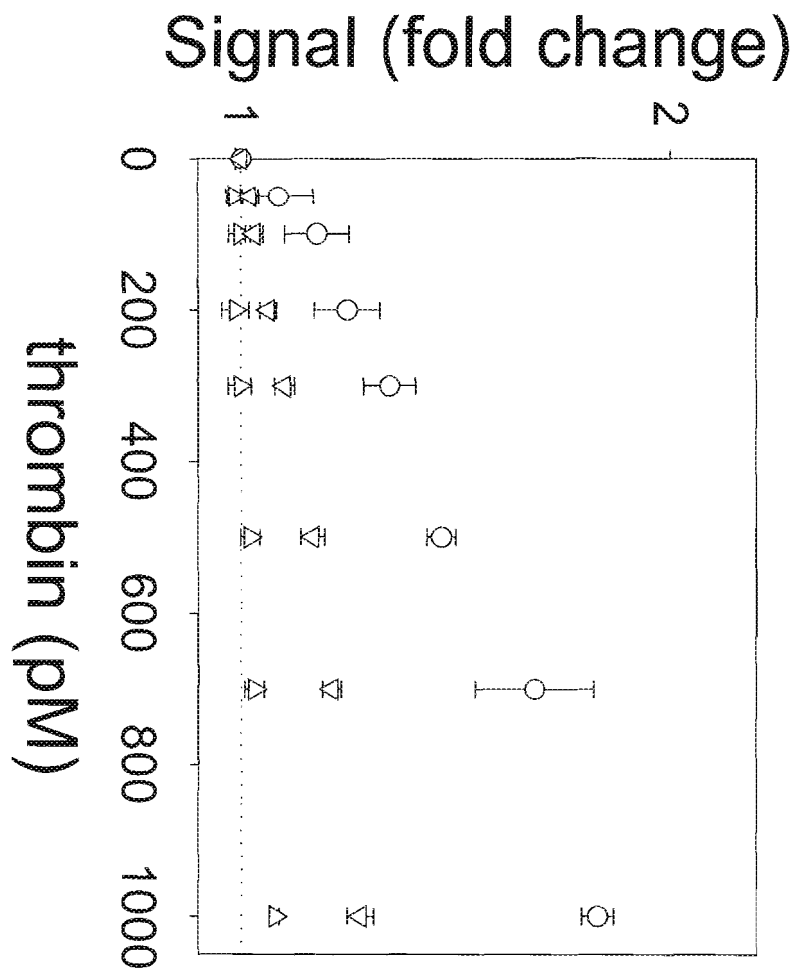


Fig. 20



Figs. 21A-21B

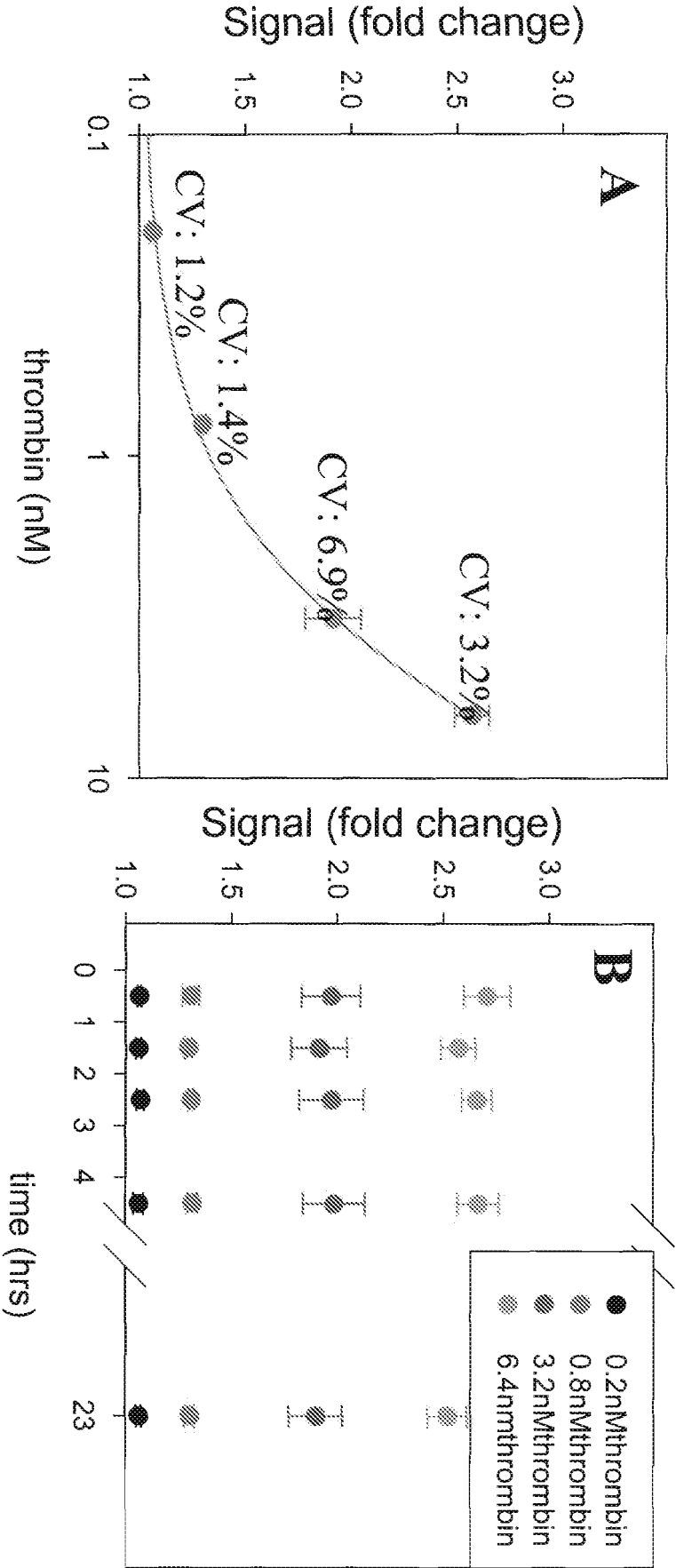
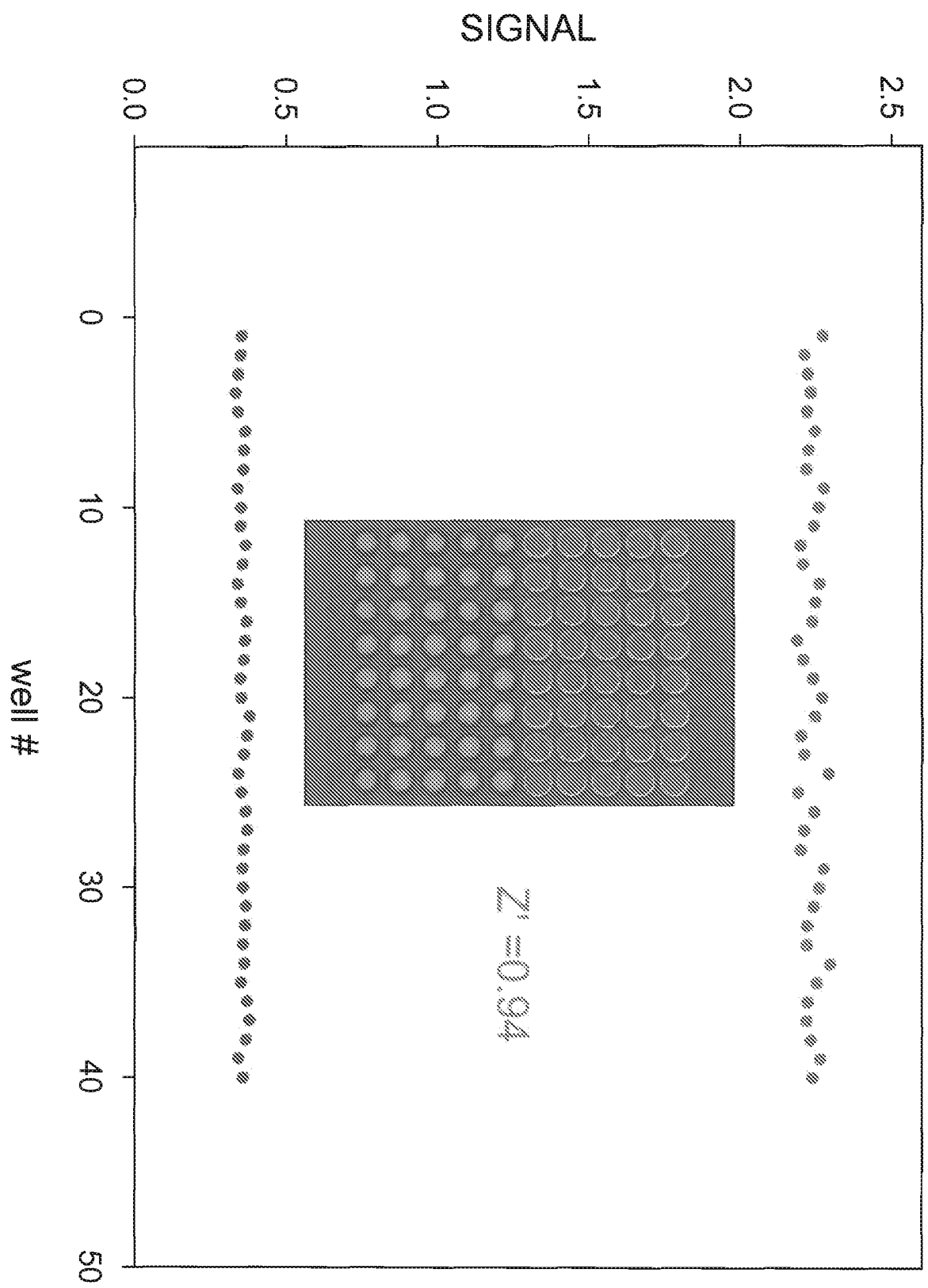
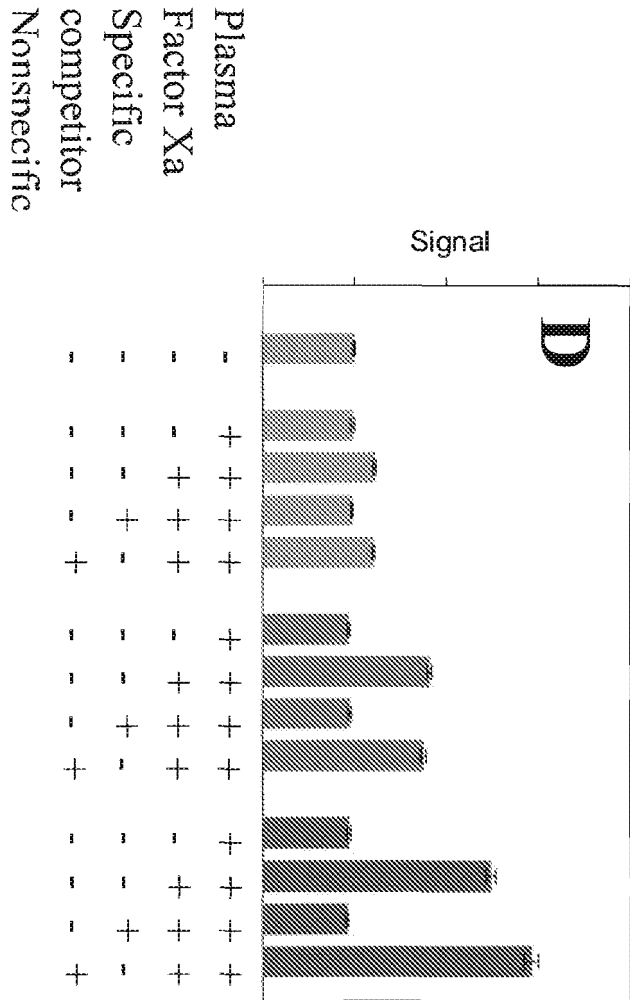
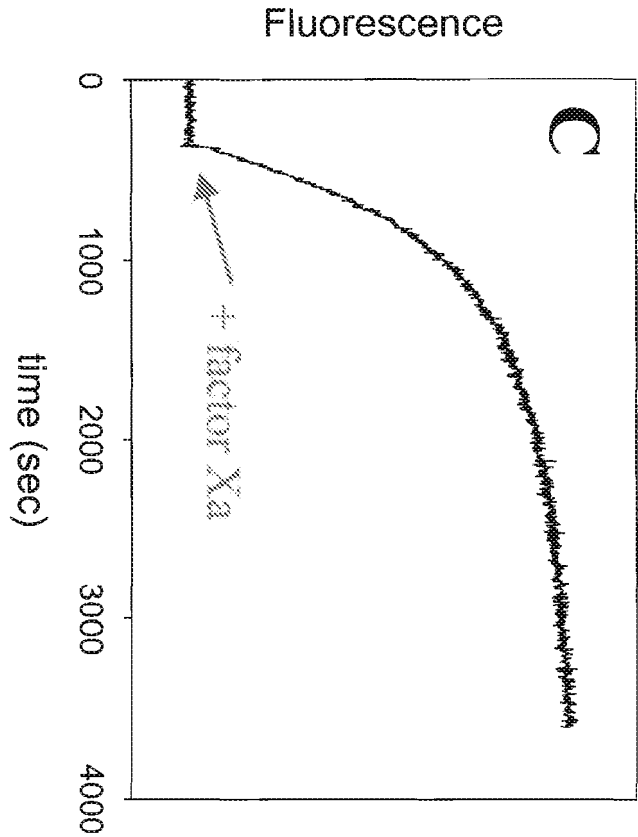
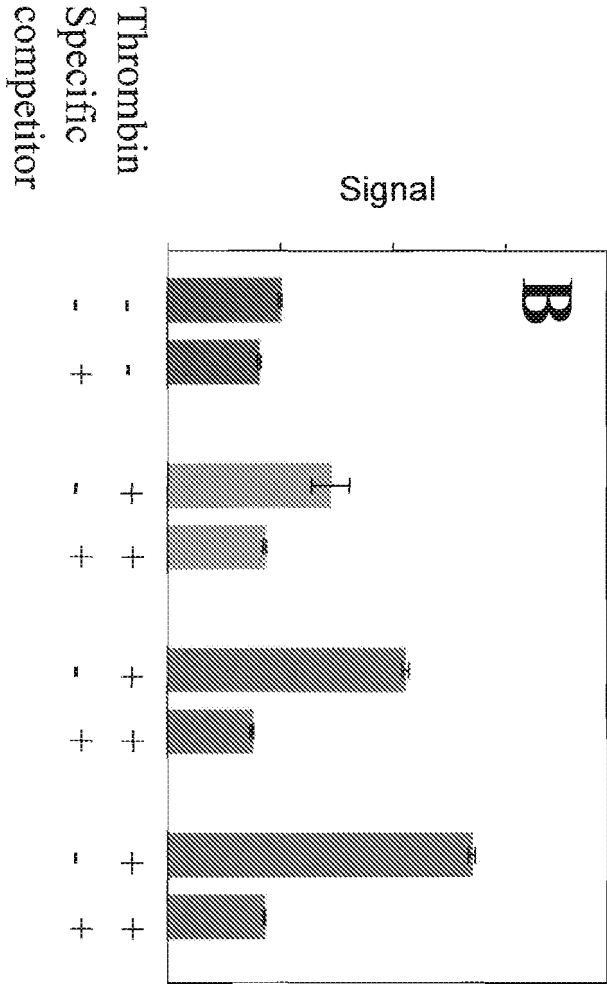
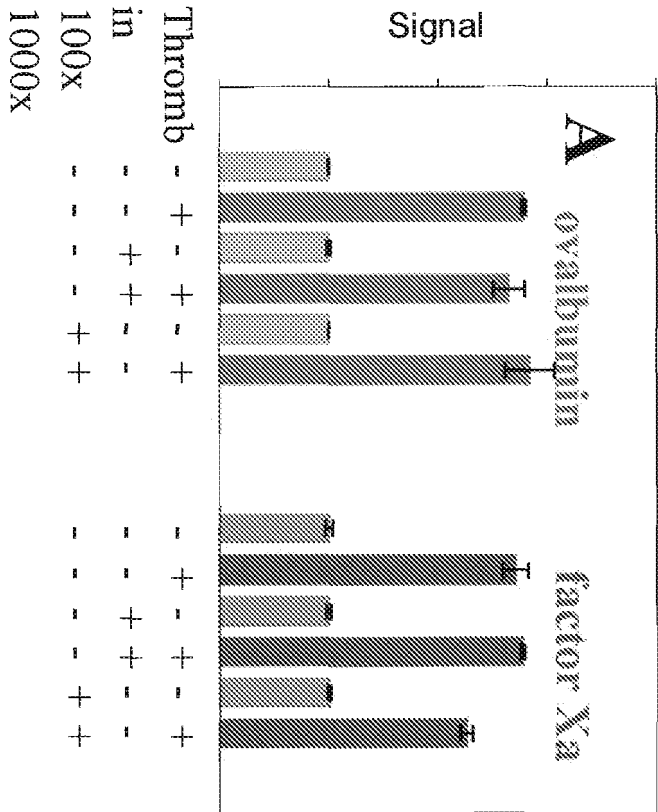
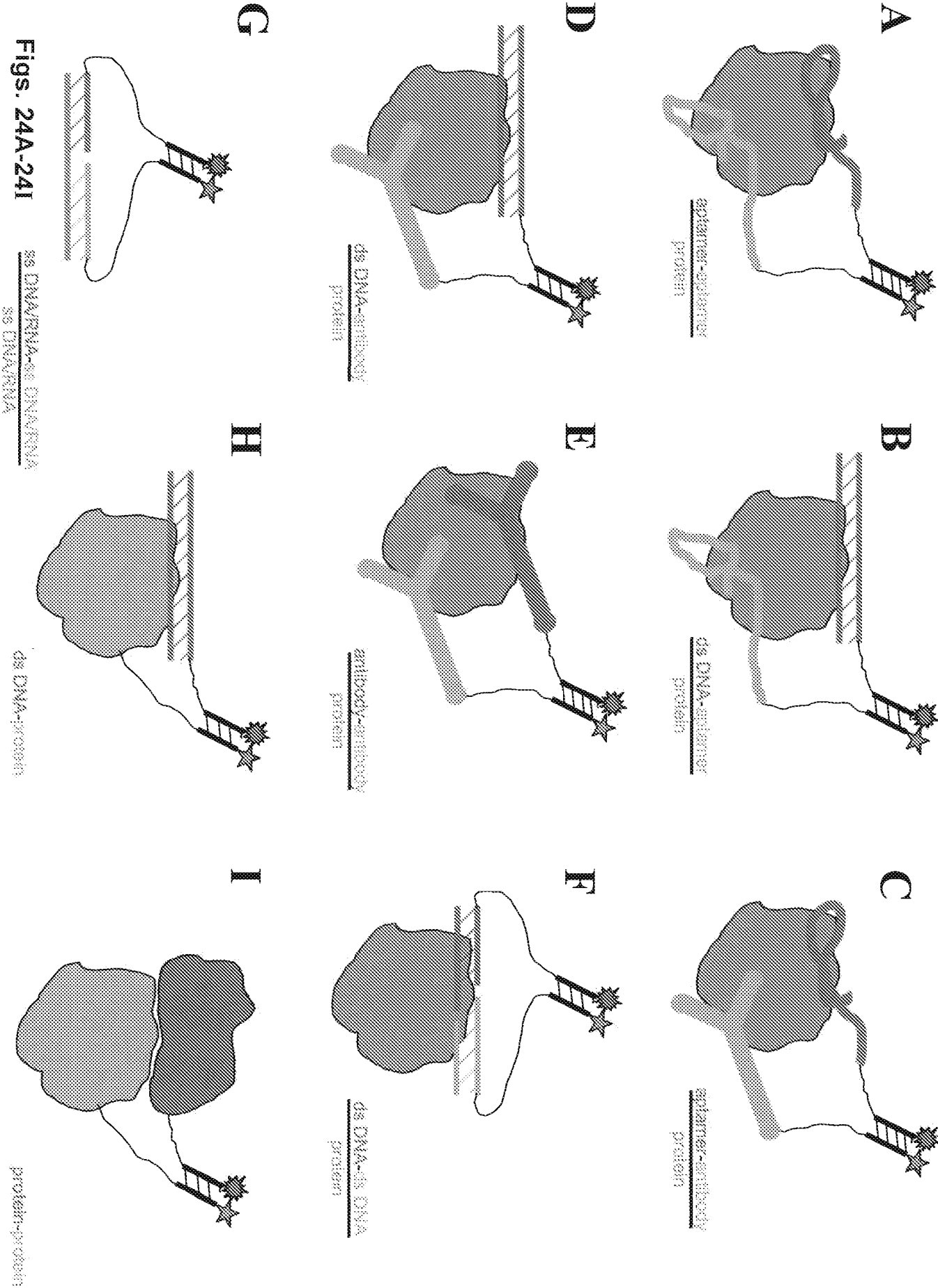


Fig. 22



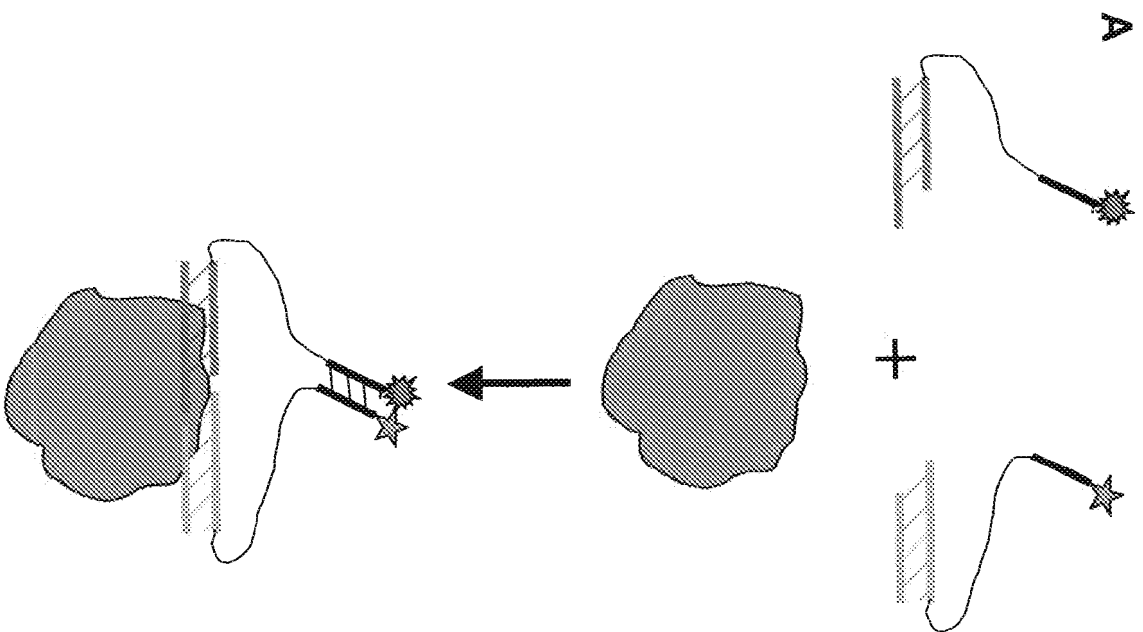
Figs. 23A-23D



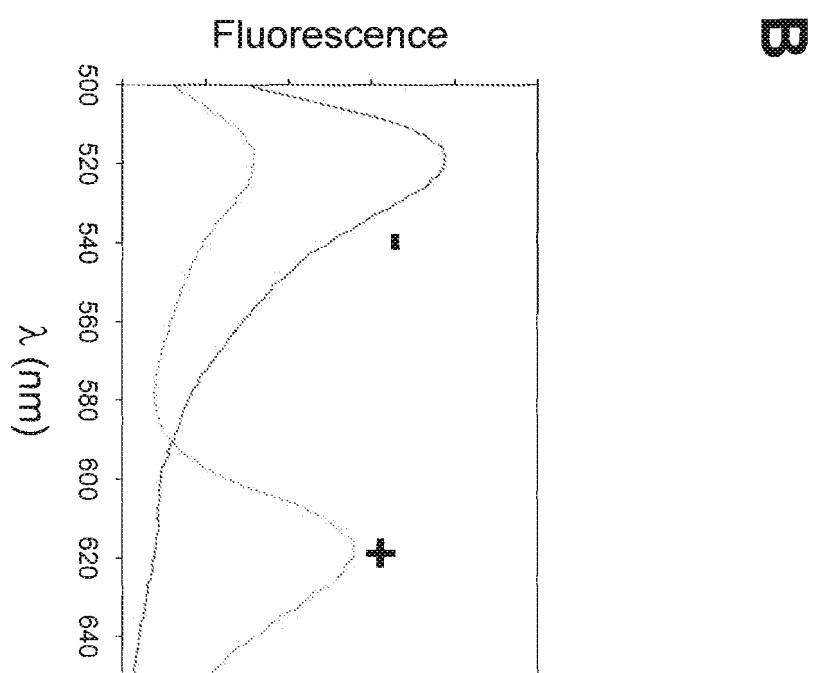
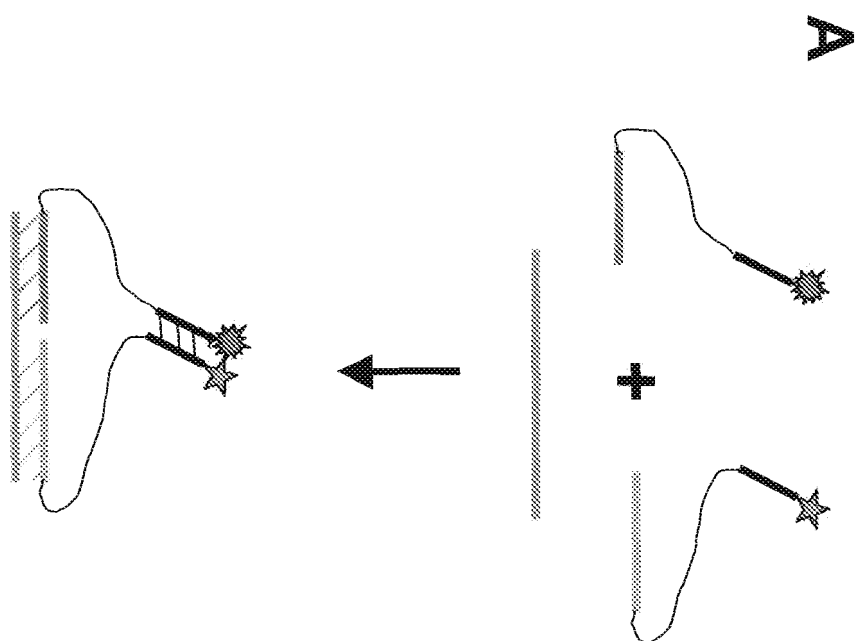


Figs. 24A-24I

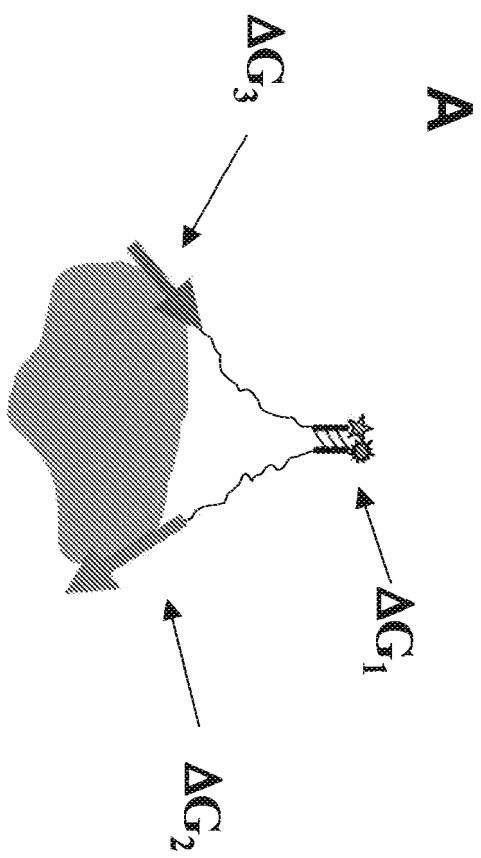
Figs. 25A-25B



Figs. 26A-26B

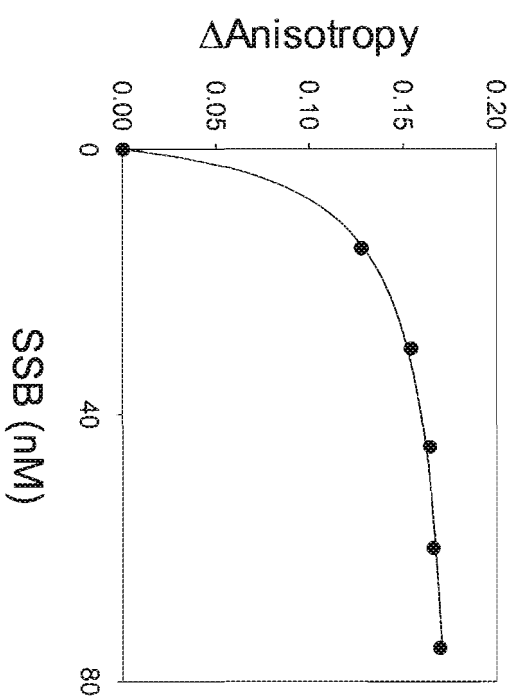


Figs. 27A-27C



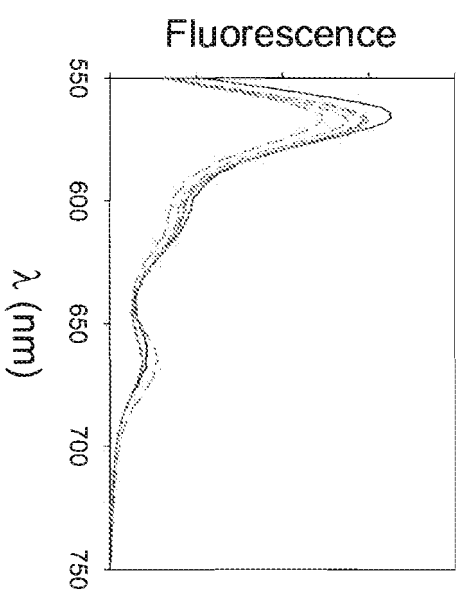
B

Nonspecific binding to single aptamer



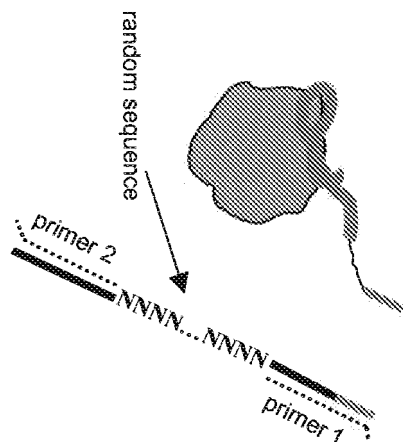
C

No signal with the beacon



Figs. 28A-28C

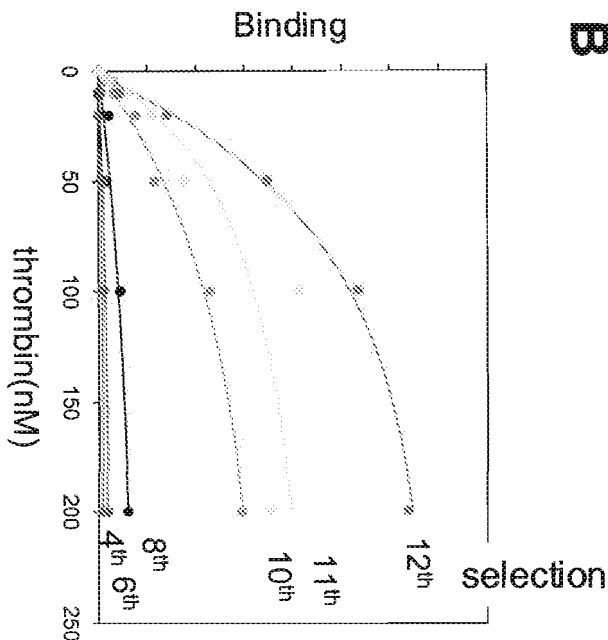
A



C

```
clone1  --GGGCGG--AGGAGGCTTAAAGCTTAAAGG--AGGCTTAAAGG--
clone9  --GAGCGT--ATGAGTATAGCTTAAAGG--AGGCTTAAAGG--
clone7  --GAGCGT--ATGAGTATAGCTTAAAGG--AGGCTTAAAGG--
clone12 --GAGCGT--ATGAGTATAGCTTAAAGG--AGGCTTAAAGG--
clone2  --GAGCGT--ATGAGTATAGCTTAAAGG--AGGCTTAAAGG--
clone3  --GAGCGT--ATGAGTATAGCTTAAAGG--AGGCTTAAAGG--
clone4  --GAGCGT--ATGAGTATAGCTTAAAGG--AGGCTTAAAGG--
clone8  --GAGCGT--ATGAGTATAGCTTAAAGG--AGGCTTAAAGG--
clone23 --GAGCGT--ATGAGTATAGCTTAAAGG--AGGCTTAAAGG--
clone22 --GAGCGT--ATGAGTATAGCTTAAAGG--AGGCTTAAAGG--
clone11 --GAGCGT--ATGAGTATAGCTTAAAGG--AGGCTTAAAGG--
clone32 --GAGCGT--ATGAGTATAGCTTAAAGG--AGGCTTAAAGG--
clone33 --GAGCGT--ATGAGTATAGCTTAAAGG--AGGCTTAAAGG--
clone29 --GAGCGT--ATGAGTATAGCTTAAAGG--AGGCTTAAAGG--
clone31 --GAGCGT--ATGAGTATAGCTTAAAGG--AGGCTTAAAGG--
clone5  --GAGCGT--ATGAGTATAGCTTAAAGG--AGGCTTAAAGG--
clone6  --GAGCGT--ATGAGTATAGCTTAAAGG--AGGCTTAAAGG--
clone35 --GAGCGT--ATGAGTATAGCTTAAAGG--AGGCTTAAAGG--
clone10 --GAGCGT--ATGAGTATAGCTTAAAGG--AGGCTTAAAGG--
clone34 --GAGCGT--ATGAGTATAGCTTAAAGG--AGGCTTAAAGG--
clone20 --GAGCGT--ATGAGTATAGCTTAAAGG--AGGCTTAAAGG--
clone21 --GAGCGT--ATGAGTATAGCTTAAAGG--AGGCTTAAAGG--
clone24 --GAGCGT--ATGAGTATAGCTTAAAGG--AGGCTTAAAGG--
clone26 --GAGCGT--ATGAGTATAGCTTAAAGG--AGGCTTAAAGG--
clone13 --GAGCGT--ATGAGTATAGCTTAAAGG--AGGCTTAAAGG--
clone15 --GAGCGT--ATGAGTATAGCTTAAAGG--AGGCTTAAAGG--
clone16 --GAGCGT--ATGAGTATAGCTTAAAGG--AGGCTTAAAGG--
clone19 --GAGCGT--ATGAGTATAGCTTAAAGG--AGGCTTAAAGG--
clone25 --GAGCGT--ATGAGTATAGCTTAAAGG--AGGCTTAAAGG--
clone17 --GAGCGT--ATGAGTATAGCTTAAAGG--AGGCTTAAAGG--
clone14 --GAGCGT--ATGAGTATAGCTTAAAGG--AGGCTTAAAGG--
clone27 --GAGCGT--ATGAGTATAGCTTAAAGG--AGGCTTAAAGG--
clone28 --GAGCGT--ATGAGTATAGCTTAAAGG--AGGCTTAAAGG--
clone30 --GAGCGT--ATGAGTATAGCTTAAAGG--AGGCTTAAAGG--
clone18 --GAGCGT--ATGAGTATAGCTTAAAGG--AGGCTTAAAGG--
ruler  1.....10.....20.....30.....40.....50..
```

B

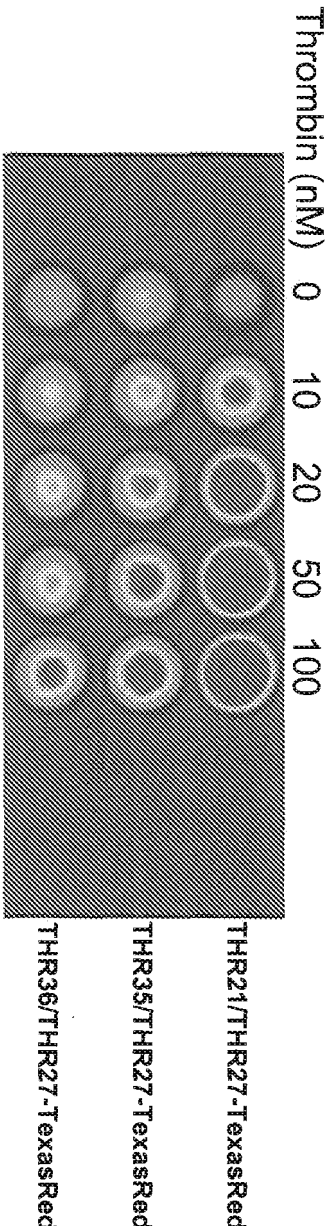


Figs. 29A-29B

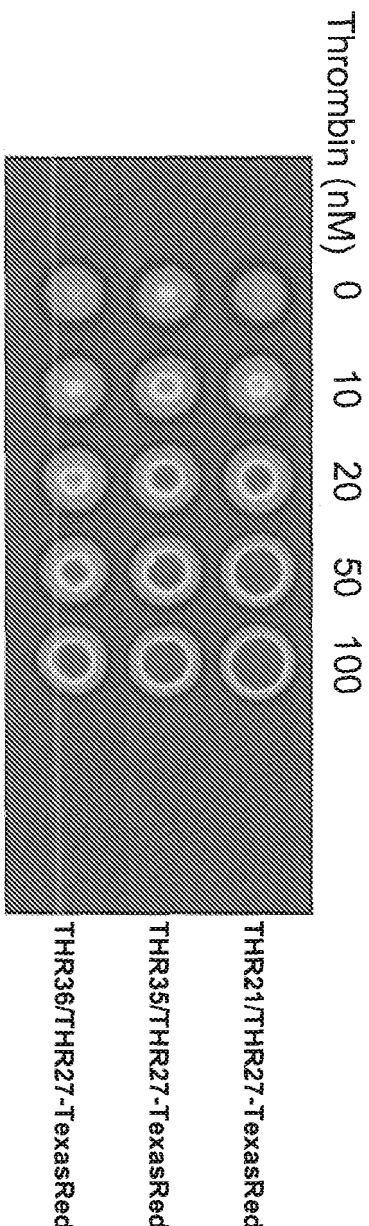
clones 20,21,24,26

5'fluoresceinAGCATGCCCCXXXXAGGTTGGGGTACTACGTATCAA TGG GTA GCG TCG TGT AACGC
5'fluoresceinAGATGGCGXXXXAGTGAAGGTTGGGGTACTACGTATCAA TGG GTA GCG TCG TGT AACGCCATA T

A

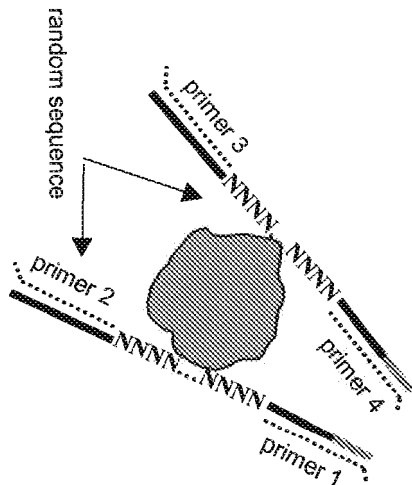


B

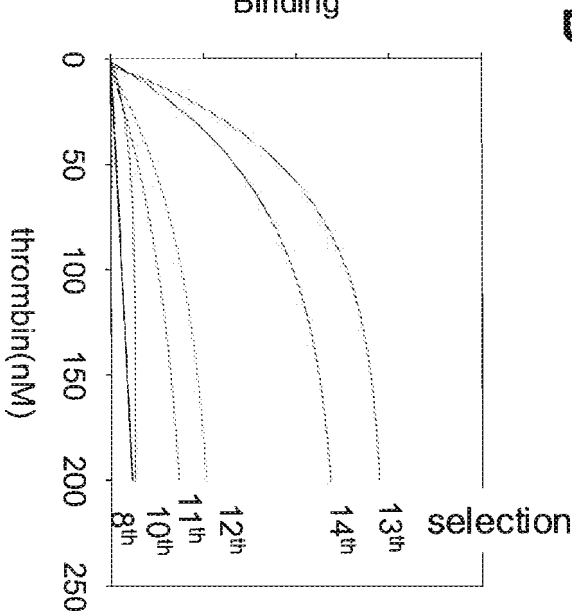


Figs. 30A-30C

A



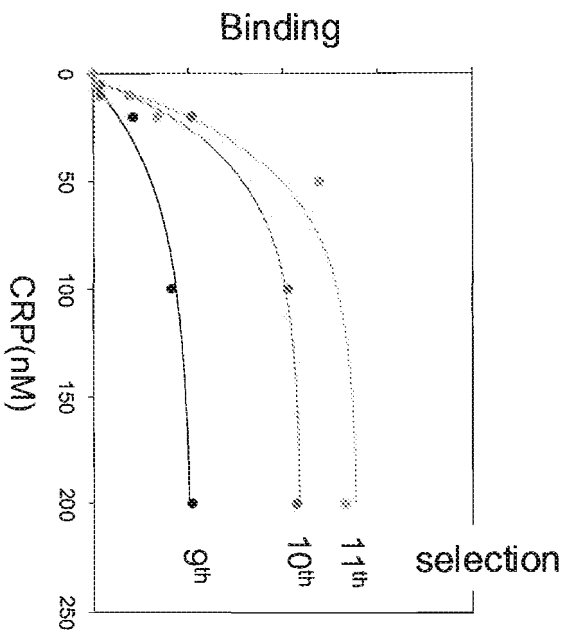
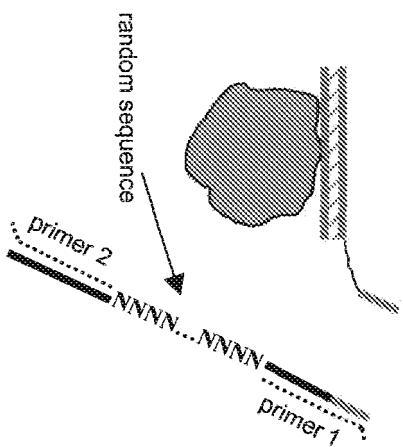
B



C

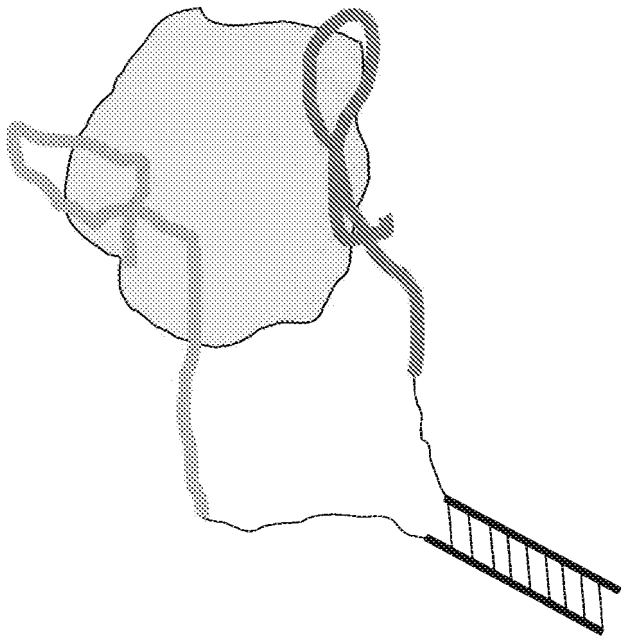
```
clone1-1  --GGGTAGGGCTGGTGGTAATAGGG--ATTGCGAT-----30
clone1-2  --GGGTAGGGCTGGTGGTAATAGGG--ATTGCGAT-----30
clone1-4  --GGGTAGGGCTGGTGGTAATAGGG--ATTGCGAT-----30
clone1-5  --GGGTAGGGCTGGTGGTAATAGGG--ATTGCGAT-----30
clone1-9  --GGGTAGGGCTGGTGGTAATAGGG--ATTGCGAT-----30
clone2-4  --GGTAGGGCTGGTAAATATAGGGGATGGCAG--ATTGCGAT-----30
clone2-7  --GGTAGGGCTGGTAAATATAGGGGATGGCAG--ATTGCGAT-----30
clone2-10 --GGTAGGGCTGGTAAATATAGGGGATGGCAG--ATTGCGAT-----30
clone2-8  --TAGGATGGGTAGGGTGGTCCCAAGGAATGGC-----30
clone2-9  --TAGGATGGGTAGGGTGGTCCCAAGGAATGGC-----30
clone2-12 --TAGGATGGGTAGGGTGGTCCCAAGGAATGGC-----30
clone2-14 --TAGGATGGGTAGGGTGGTCCCAAGGAATGGC-----30
clone1-8  ACGGCTAGGATGGGTAGGGTGGTCCGCTTA-----30
clone2-2  --TAGGCTGGGTAGGGTGGTCAACTATGGGG-----30
clone1-7  --AATGGGAGGTGGGGTGGCGGAGAGTGG-----30
clone2-5  --CACAGAGAGGCGAGCGCTGAGCATAGTGC-----30
clone2-13 --GGAGATGCAGGTACTGAGTAGGGAGTGTGC-----30
clone2-3  --GGGTGACTGGTCAAGAGG--ATAGTACGATGC-----30
clone2-11 --GATG--TGGCCAGAAAGCATTAACAGACGTAC-----30
clone2-1  --AAGGCTGCCATCTGGGTCCGACGAGTACCA-----30
clone1-10 --GGGCGAAGGTACGAAAGACGATGCACGTGC-----30
clone1-6  --GGTGTGGGTGG--TTATGTGTGTAAGCGGG-----30
clone1-3  --GGCACAACCCGATATGCTATAGAACTGAGC-----30
clone2-6  --CCATCGACACATAGGGTACACGCGCTTGC-----30
ruler 1.....10.....20.....30.....40
```

Figs. 31A-31C

[illegible]

Figs. 32A-32B

A



B

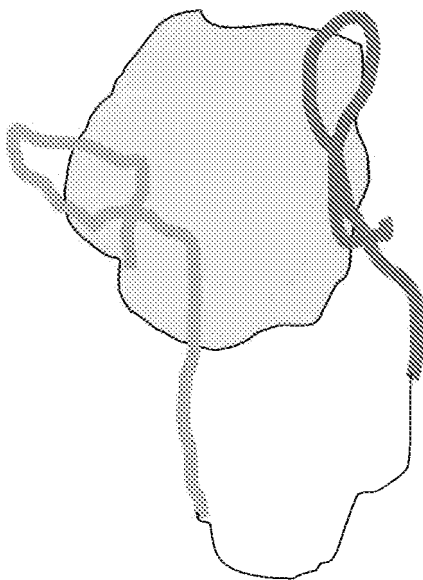


Fig 33

